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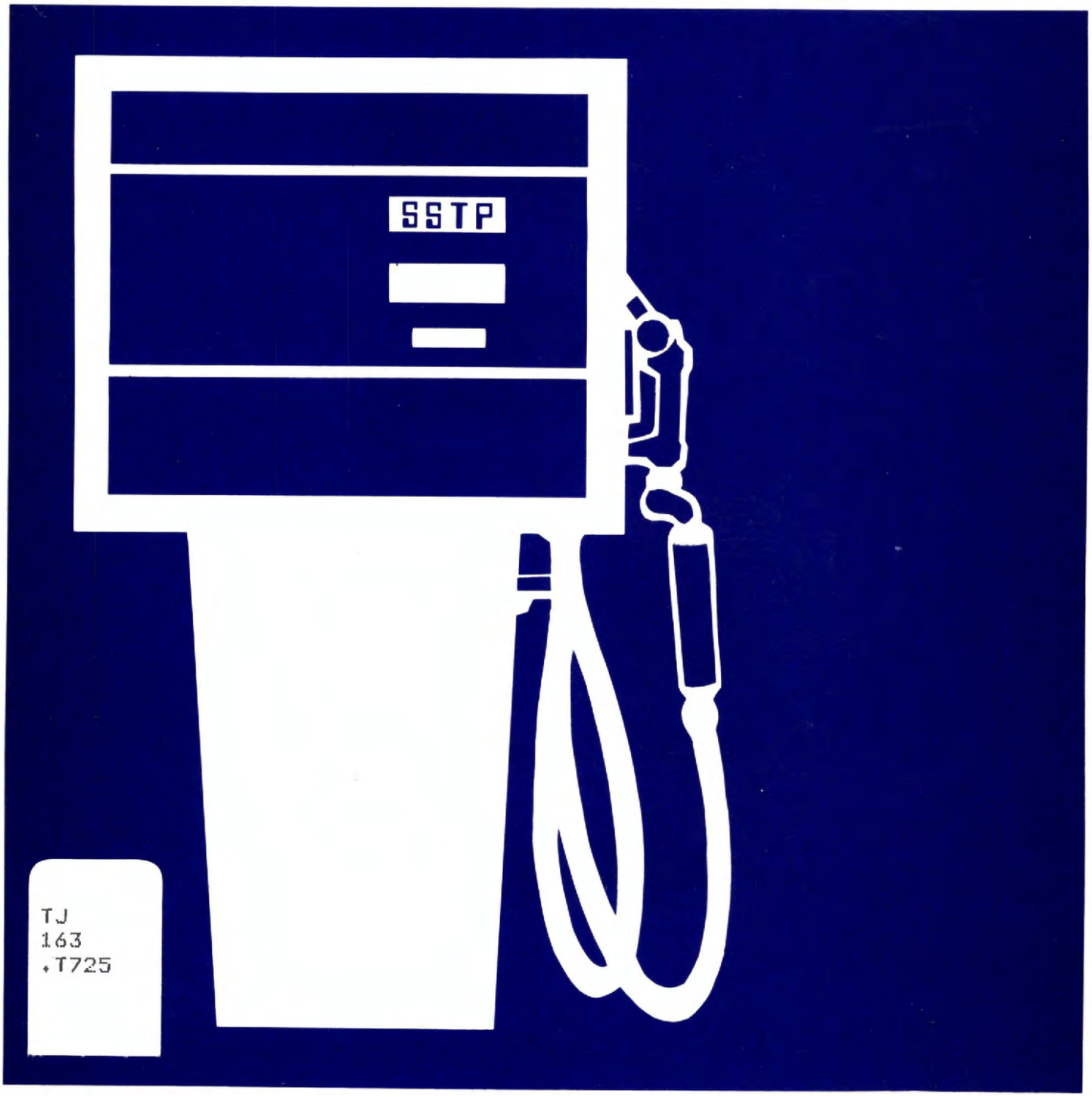
Office of the Secretary of Transportation

Transportaton Energy Contingency Planning:

Transit Fuel Supplies Under Decontrol

May 1982



Transportation Energy Contingency Planning: Transit Fuel Supplies Under Decontrol

May 1982

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FOREWORD

Adequate supplies of diesel fuel are essential to transit operations. During most of the last ten years, although fuel prices increased significantly; supplies were assured by Federal allocation rules. However, early in 1981, these rules were eliminated, decontrolling petroleum. In the free market environment resulting, prices and availability will be governed by the forces of supply and demand. Transit operators will have to be prepared to deal in this marketplace to obtain needed fuel. In an energy emergency, which could result from any number of circumstances, this market would become tight with the likelihood that higher prices would result. Transit operators need to undertake energy contingency planning designed to address this situation in order that they be prepared, should an emergency occur, to compete effectively in the marketplace for vital fuel supplies.

In order to assist transit operators in carrying out this important activity, the Urban Mass Transportation Administration (UMTA) is undertaking a number of projects designed to develop technical assistance materials on contingency planning. This report, which represents one of the series, is designed to give transit operators a better understanding of the diesel fuel market under decontrol and the implications of this new environment for contingency planning. In addition, it presents a number of fuel supply strategies which transit operators may wish to consider as a part of their contingency plans. Given the importance fuel plays in day-to-day operations and in operator budgets, we believe a number of the strategies also have validity in non-emergency circumstances as well. We believe this report will be useful to transit operators wishing to improve their contingency plans as well as their current fuel supply practices. Other documents in this series will be distributed as they become available.

Additional copies of this report are available from the National Technical Information Service, Springfield, Virginia 2161. Please refer to UMTA-DC-06-9035-82-1 in your request.

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EXECUTIVE SUMMARY

To date, the United States has never relied on the free market to allocate petroleum products during a supply interruption. Price and allocation controls have been in effect in every instance. Urban mass transit systems have benefited from these controls as a result of their designation as priority end users. Historical reliance on regulations to guarantee continued delivery of diesel in shortage conditions is evident in the fact that many energy emergency contingency plans developed by mass transit systems have ignored the question of fuel acquisition. It was simply assumed that fuel would be made available by federal government and/or state government fiat.

The end of petroleum price and allocation controls has significantly altered the energy environment in which mass transit operators would be working in the event of another petroleum supply interruption. The diesel fuel market previously characterized by regulations is now characterized by competition. Under shortage conditions, acquisition of diesel fuel by a mass transit system will be determined both by the system's ability to find a supplier with diesel to sell and its ability (and willingness) to pay a higher price than other diesel customers. The very limited ability of all diesel users to substitute other fuels for diesel insures the emergence of intense competition among diesel consumers driving diesel prices to levels never before experienced. In a recent contingency planning exercise in which a 2 million barrel per day shortfall was hypothesized, diesel retail prices rose to over three dollars a gallon.

The potential for regulatory relief existed in the form of The Standby Petroleum Allocation Act of 1982. This act held out the possibility of regulatory assistance to transit operators by requiring "to the maximum extent practicable" the "maintenance of all public services,...including transportation facilities". Passage of the Act into law and the subsequent development of standby allocation and price controls might have indicated a willingness on the part of the federal government to return to a controlled market environment under certain circumstances.

The veto of the Act underscored the Administration's opposition to controls under any circumstances and highlighted the need for each transit system to take independent actions to reduce their vulnerability to another oil supply disruption. It must be recognized that even if standby authorities are passed into law at some point in the future, the President's aversion to controls makes the activation of these authorities highly unlikely.

It is possible that transit systems may ultimately benefit from state allocation and price regulations which may be established to fill the vacuum made by the termination of federal controls. Over two thirds of the states have considered state-wide regulations, many of which have as an objective the protection of public services including transportation. Transit operators should monitor and, if possible, influence the development of legislation pertaining to energy emergencies in their respective state legislature. Yet, transit operators should not assume that their fuel requirements will be satisfied as a result of state allocation regulations. No one can predict how the petroleum product market will behave if oil companies are faced with fifty sets of allocation regulations. Moreover, experience has shown that the effectiveness and benefits of state energy controls are open to question. A prudent position would be to assume that transit operators will be required to satisfy their fuel requirements on their own.

The transit operator will need to undertake an activist role if he is to succeed in acquiring fuel in a free market suffering a sudden drop in supply. This activist role will, at the very least, involve continuously tracking diesel prices--both contract and spot--and maintaining close contact with diesel suppliers. In essence, mass transit systems need to establish and maintain the same kind of relationship with diesel suppliers that they once had with federal and state regulators.

More substantive actions exist which could assist the transit operator in acquiring diesel and provide a degree of fuel security. These actions are:

- diversify suppliers;
- purchase diesel fuel on the spot market;
- establish a centralized emergency fuel purchasing agent;
- trade in the futures market;
- pay a higher price in return for guaranteed deliveries later; and
- build or expand storage facilities.

Though all options offer benefits to transit operators, none is without costs. Transit operators must be willing to pay for the security offered by each of the options as one is willing to pay a premium on an insurance policy. The options which provide the most security for the least cost will vary among transit systems. Each transit system must identify the most attractive options given its own situation and this should be done before a crisis occurs. Failure to plan for fuel acquisition before a petroleum supply emergency will inhibit both the transit system's ability to avoid paying the highest prices and its ability to take advantage of whatever opportunities for obtaining fuel arise in the market.

I. BACKGROUND

A. Purpose

The three-fold objective of this document is to provide the urban mass transit operator with:

- current information on the petroleum market, particularly those aspects of the market that would be of paramount importance in the event of a fuel supply interruption;
- an understanding of the potential impact of fuel supply disruptions on diesel prices; and
- a set of alternative response actions that might be taken to secure supplies of diesel fuel in a free market response to an oil supply disruption.

Previous studies have addressed the peculiar problems of mass transit systems in energy shortages. Those studies were undertaken when regulations heavily influenced the price and distribution of petroleum products. For example, regulations recognized a high priority status for mass transit systems and guaranteed mass transit systems deliveries of diesel fuel. Moreover, there was a different perspective on the part of federal officials concerning the proper role of federal, state, and local governments in resolving energy related problems.

As of January 1981, federal price and allocation regulations on crude and petroleum products were abolished. The domestic petroleum market will no longer operate according to a set of federally mandated regulations. Rather, the market will operate according to the laws of supply and demand where sellers compete for customers and buyers compete for petroleum supplies. The altered oil market situation has led transit operators to ask two basic questions: How do these changes affect urban mass transit operators and what actions can be taken within the new environment to reduce the transit system's vulnerability to oil supply disruptions? The Urban Mass Transportation Administration (UMTA) determined that these questions needed to be addressed now during a period of normalcy. Waiting until a shortage appears imminent would likely cause planning steps to be taken in haste and decisions made without the luxury of having adequate time to analyze all possible consequences of such actions.

This document does not offer a definitive examination of all problems encountered by mass transit operators during fuel shortages. Issues and actions unrelated to fuel acquisition are not addressed. However, information is provided on the current energy market and insights are offered into the problem of contingency planning. The document is intended to provoke thought, structure the problems facing operators during fuel shortage conditions in a free market environment, and suggest alternative steps which may be useful in meeting fuel needs.

B. Introduction - Statement of the Problem

Contingency planning is a management exercise that attempts to establish a complete range of response options on the basis of incomplete information. Urban mass transit operators are faced with the problem of having to develop an array of actions, any one of which may be taken to enhance diesel availability in another fuel supply interruption, the nature of which cannot be predicted.

Fuel interruptions have three dimensions: (1) depth--the volumetric difference between pre-crisis and crisis supply levels; (2) breadth--the geographical area suffering the interruption, (i.e, city, region, country, Western allies or world); and (3) duration--the length of time before supplies return to normal levels. These dimensions cannot be predicted with accuracy, yet, transit operators have a responsibility to take steps now that will mitigate the impact of a fuel interruption on their ability to provide service later.

Transit operators face a difficult operating environment during shortage situations. Although operators can be certain that the energy intensive mass transportation industry will continue to be highly vulnerable to any interruption, they are uncertain as to what actions might be taken to reduce this vulnerability. Operators can be certain that they will be competing in an unregulated market for diesel fuel. How the market will respond to the supply interruption is uncertain. Operators can be certain that diesel prices will rise, but uncertain about the magnitude and duration of the price increase. Operators can be certain that their budgets will be stretched, but uncertain over the source of additional funding. Operators can be certain that the maintenance of service relies on continued deliveries of fuel supplies, but uncertain as to the behavior of the individual suppliers on which the system depends. Mass transit operators can be certain that they will be asked to become part of the solution while being uncertain over their ability to keep from becoming part of the problem.

Though transit operators face numerous uncertainties within the context of an oil supply disruption, there are steps that can be taken now to assist transit operators. These steps may be categorized into three phases. They are:

- Assess the environment in which transit operators are currently working and in which they will likely find themselves in the event of an interruption within the foreseeable future.
- Understand the potential impact of a given oil interruption.
- Identify a range of response actions, each one of which could reduce the vulnerability of a transit system in an oil shortgage.

Assessing the environment is equivalent to identifying and learning the rules of the game. The transit operator will be more effective in acquiring fuel if he understands the laws and parties involved in the fuel market and, thus, can anticipate events under a given set of circumstances. A full understanding of the environment will permit the transit operator to assume a pro-active, rather than a reactive market strategy.

Determining what actions may be necessary to ensure diesel availability in an energy crisis requires an understanding of the potential impact of supply disruptions. In a free market, the magnitude of the problem will be reflected in the size of the price increase. Obviously, no one can predict with any certainty the size of the next petroleum disruption or the strength of demand for petroleum products at the time of the disruption. However, elasticities can be assigned to various products, demand can be estimated, and a shortage can be hypothesized. Modeling these three factors permits the establishment of price ranges. These ranges indicate the likely impact of a particular shortage on society.[1]

Once the likely impact of hypothetical shortages are established, the contingency planner can begin to identify options which will mitigate the potential impacts. Development of these response options falls into the third phase.

A range of actions must be established because specific actions cannot be identified as the best action due to the unknown nature of the supply interruption. Response actions that might be appropriate in the event of a fuel shortage caused by severe winter weather, say frozen rivers and blizzards, may be totally inappropriate or inadequate in a supply interruption caused by a politically motivated international oil embargo. The first question being asked in phase three is "What can I do?" and not, "What should I do?" If phase three of the contingency planning effort is performed successfully, the transit operator will have already identified his options by the time the crisis has erupted. He will also know how best to go about implementing each option.

At the outset of an emergency, his task is to decide which response action should be selected. Unfortunately, this task is not simple and not without risk for there are very few response actions that can be taken which do not have some negative consequences. One goal of contingency planning is to identify these negative consequences so that steps can be taken to minimize them.

Many emergency response actions that might be taken during a fuel supply interruption do not concern fuel acquisition. Such response actions may involve adding buses, rescheduling routes, extending peak period service, etc. This study does not examine response options unrelated to the acquisition of diesel. The focus is entirely on actions and strategies pertaining to acquiring diesel fuel, for without diesel fuel, the transit system cannot operate and, thus, the other response actions become moot.

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[1]Such information is particularly useful in the early stages of an interruption. For example, in a politically inspired disruption, there will likely be signs that an interruption is imminent. At that time, the size of the potential interruption can be estimated on the basis of historical data. Using this information, the price impact of the disruption can be reasonably estimated.

II. THE DECONTROLLED ENVIRONMENT

A. Purpose/Introduction

This section presents a profile of the environment in which transit operators will likely be operating during a future fuel shortage. Focus will be placed on the role of the federal government in the energy market as manifested through regulations. Federal regulations are by no means the only factor influencing the environment. Other factors are:

- physical capabilities and limitations of the transit system;
- commuting habits of the local population;
- nature of the crisis being addressed;
- budgetary concerns;
- short-term and long-term objectives of city officials; and
- behavior of diesel suppliers.

Though only one of several factors, the regulatory factor fundamentally colors the energy market by specifying the rules by which both sellers and purchasers of diesel fuel must act.

On January 28, 1981, President Reagan, by executive order, terminated the remaining price and allocation controls in the crude petroleum and refined product markets. This act signaled a break with the past which had been characterized by the federal government's intervention in the industry through allocation and price controls. Henceforth, the petroleum market is to be characterized by the laws of supply and demand, where price reflects the equilibration of the volume of available supply and the volume demanded. This free market approach has been adopted for both normal and abnormal times. The administration's policy is based on the premise that the most efficient use of a scarce resource results from the free play of market forces unencumbered by allocation and price controls even in periods of severe shortage.

A free market approach has never been used in an energy crisis.[2] When the oil embargo of 1973/74 began, crude petroleum and refined products were already subject to price controls.[3] During the embargo, the Emergency Petroleum Allocation Act of 1973 (EPAA) was introduced into law. The EPAA regulated the distribution of refined products basically by freezing supplier-purchaser relationships and specifying a set of priority users. In 1979, when the United States was faced with the cutoff of Iranian crude oil,

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[2]Crude oil and refined products were subject to controls for the first time during the Second World War.

[3]The Economic Stabilization Program, Phase IV, included a two tier price scheme for domestic crude oil. Price increases on refined products were limited to crude cost increases.

most of the regulations implemented in 1973 and 1974 were still in force and basically unchanged (though diesel prices had been deregulated in 1976).[4] In addition to the existing regulations at that time, Special Rule No. 9 was established which mandated the delivery of middle distillate fuel (i.e., heating oil and diesel fuel) to specific industries including mass transportation systems. In short, there was no free market in the domestic oil industry during the two significant postwar oil supply interruptions experienced by the United States.

The fact that price and allocation controls were lifted does not mean, however, that the federal government has stopped thinking about and planning for the next energy shortage. In fact, it might be said that a more concentrated effort has been devoted to contingency planning since decontrol than before. To understand this apparent contradiction, one needs to understand the role of the Department of Energy (DOE) as perceived by senior DOE officials and then place this in the overall context of the administration's desire to give to emergency planning, in general, a high priority.

B. Role of the Department of Energy in Emergencies and Use of the Strategic Petroleum Reserve

Given that allocation and price controls have been lifted, what can transit operators expect from the DOE in the event of a fuel supply interruption? The answer stems in part from the proper role of the federal government in an energy emergency as perceived by senior administration officials. Perhaps the best way to describe the DOE would be as a "facilitator." That is, the fundamental decisions of inventory management, refinery slates, and product distribution will be left to the petroleum industry. To make the "best" decisions, industry will need accurate and current information on the international and national crude and product situations. The DOE can assist industry by providing helpful information. Thus, the DOE is to facilitate an efficient and effective response by providing industry with information useful to the industry. Such information may include expectations of the size and length of the disruption or significant shifts in the behavior of major importers, refiners, or jobbers. DOE officials also expect to provide consumers with information on marketers with available supply. In this case, the DOE might act as a matchmaker for sellers and purchasers, although the specifics of the transaction would be left to the two parties.

A more activist role will be played by the DOE if the emergency is so severe as to warrant the use of the Strategic Petroleum Reserve (SPR). In this case, the DOE would intervene in the market, only to the extent of distributing crude oil to domestic refiners. At this time, however, no decision has been made concerning the conditions under which the SPR would be used, and no plan has been developed that specifies how the petroleum is to be distributed, who

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[4]The Economic Regulatory Administration of the DOE made several modifications to the existing regulations throughout the spring of 1979. Their objective was to make the regulations more applicable to the then current market conditions.

would receive it, or what pricing mechanism would be used. Of more direct consequence to the transit system operator is the fact that the SPR contains only crude oil. The withdrawal of the crude, its refining, and the subsequent distribution of the product will take weeks. Thus, the SPR would be of no immediate benefit to transit operators. Though the President has the authority to establish either a centralized or regional product strategic petroleum reserve, the President has chosen not to exercise this option and no such reserves exist.

In essence, the lead in the response to an energy emergency will be left to the energy industry, with the federal government playing a supporting role.[5] Transit authorities can depend on the DOE for information which may assist them in deciding which actions are most appropriate. Transit authorities may also be able to find out from the DOE which refiner or jobber has diesel supplies as yet uncommitted. Transit authorities cannot rely on the DOE to insure that fuel is made available to transit systems. Like all other large volume diesel customers, transit systems will be left to compete for themselves for fuel in a tight market.

C. Existing Emergency Authorities

Termination of crude and product allocation and price controls, plus reliance on the free market to respond to a supply interruption appear to paint a picture of an environment totally devoid of regulatory authority. This is not the case. When President Reagan lifted controls, he did not (nor could he) abrogate all existing emergency authorities. In fact, the President argued that the remaining emergency authorities provided him with the necessary means to intervene in the market if the circumstances warranted such drastic steps. Most of the remaining authorities are of a "standby" nature. Authorities having some bearing on fuel availability for transit systems are listed below and the pertinent aspects of the authorities are summarized.

- Defense Production Act

The Defense Production Act provides the President broad discretionary power to divert and allocate fuel supplies for military and defense related purposes. The only limitation imposed on the President is a prohibition against the use of any rationing plan. This limitation was passed as part of the Energy Security Act of 1980. The Act expires on December 31, 1984.

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[5] A major exception to this rule would occur if the federal government needed to direct companies to undertake specific actions pursuant to U.S. obligations under the International Energy Agency's (IEA) Emergency Oil Sharing Program. The IEA Oil Sharing Program is divided into two phases. In the first phase, participating oil companies would redirect crude and product movements on a voluntary basis. If the shortage has not been evenly spread among IEA countries as a result of these voluntary adjustments, the second phase is implemented, at which time governments may direct oil companies under their jurisdiction to make additional adjustments.

- Emergency Energy Conservation Act (Title II, Part A: Emergency Energy Conservation Program)

The Emergency Energy Conservation Act (EECA) requires the President to establish national and state conservation targets. State governors were to submit state emergency conservation plans that would meet the targets set by the President. The Secretary of the Department of Energy was to develop a Standby Federal Conservation Plan. Conservation plans could not include a "tax, tariff, or user fee" or a rationing plan. This act expires on July 1, 1983.

Though this statute is still on the books, it has no practical impact. The few states that established conservation targets and developed plans are holding them in abeyance. The President has not, and will not set conservation targets.

- Energy Policy and Conservation Act of 1975

The Energy Policy and Conservation Act of 1975 (EPCA) permits the President to order individual oil companies or any other organization to take whatever actions the President deems necessary to satisfy U.S. obligations under the International Energy Program (IEP). It also provides antitrust protection for oil companies participating in the International Energy Agency's Oil Sharing Plan. (Title II, Part B: Authorities with Respect to the International Energy Program.)

The EPCA also provides the President with authority to develop conservation contingency programs which may not include a tax, tariff, user fee, or any mechanism that would affect the price of crude oil or refined petroleum products. (Title II, Part A, Section 202: Energy Conservation Contingency Plans.)

Pursuant to this requirement, the DOE, under the Carter administration, submitted five conservation contingency programs to the Congress for approval. All five were rejected. One of the five plans was a rationing plan for gasoline and diesel fuel. Congress's aversion to any rationing plan was exhibited in its passage of an amendment to EPCA which specifically prohibits rationing as a means of restraining demand without the expressed approval of Congress.

The EPCA authorizes the President to require emergency petroleum production on federal lands during an emergency. In cases where the state government determines the emergency production rate, the President may order that rate.

The EPCA originally authorized the President to establish a Strategic Petroleum Reserve of up to one billion barrels. Additionally, it authorized the establishment of an Industrial Petroleum Reserve. (Title I, Part B: Strategic Petroleum Reserve.)

Under the EPCA the President may, by rule, limit exports of crude petroleum and refined products during an emergency. (Expires June 30, 1985.)

- Energy Security Act of 1980 (Title VIII: Strategic Petroleum Reserve)

The Energy Security Act requires the President to fill the Strategic Petroleum Reserve (SPR) at an average rate of at least 100,000 barrels a day in fiscal year 1981 and thereafter. Subsequently, this rate was amended so that the President is to "seek to" fill the SPR at a rate of 300,000 barrels a day.

The Energy Security Act amended the EPCA to prohibit the sale of Naval Petroleum Reserve (NPR) No. 1 (Elk Hills) oil except to the SPR. Moreover, it authorized the President to place the U.S. share of all NPR oil into the SPR or to exchange, directly or indirectly, NPR oil for oil designated for placement in the SPR.

The President may suspend the filling of the SPR if he has issued an order to draw down the SPR in response to a severe energy supply interruption.

This Act also amended the Defense Production Act to stipulate that a rationing plan could not be instituted without the approval of Congress. (Title I, Section 103: Restriction on Rationing.)

Significance of Existing Emergency Authorities for Transit Operators

Of the laws presented above, only two have any potential for directly influencing the availability of diesel to transit operators and both would likely hurt transit systems by moving fuel away to other end users. The Defense Production Act stipulates that the federal government could allocate both crude oil and/or refined products to satisfy military and defense contractors' fuel requirements in the event of a threat or a real national emergency. Military fuel requirements consist mostly of jet fuel though diesel fuel is also required. Consequently, activation of this authority (which would occur only under extreme circumstances) could have a negative impact on availability of fuel to transit systems.

The President's authority to direct oil marketers to take any action he deems necessary to satisfy IEA obligations could result in importers, (i.e., major refiners) having to redirect crude and product imports to other IEA countries. This could have an indirect impact on the overall availability of fuel in the domestic market and, therefore, aggravate the problem for transit operators.

In summary, none of the existing emergency authorities offers transit operators any relief in the way of mandating or even encouraging delivery of diesel to them as a class of customers. Such regulatory relief would be forthcoming only if the President were to accept standby petroleum allocation authority, similar to those contained in the Standby Petroleum Allocation Act of 1982.

D. Proposed Emergency Authority: The Standby Petroleum Allocation Act of 1982

Not every federal official believes that the free market is capable of coping with all shortages regardless of severity. Moreover, many Congressmen who were in office during the 1973/74 and/or the Iranian Crisis remember the extreme pressure they felt "to do something." This pressure led to the passage of allocation and price regulations which were subsequently blamed for aggravating, rather than mitigating supply problems. In order to avoid the past experience of writing, debating, and voting on emergency legislation in a crisis atmosphere, many legislators favor the consideration of emergency authorities in a period when the market is experiencing an abundance of supply. Some legislators believe it is incumbent upon the federal government to protect that segment of society which would find it difficult or impossible to cope with sharply increased fuel prices. Others are interested in protecting the independent marketers in the oil industry against being squeezed out of the market in a supply disruption. Still, other legislators are worried over the prospect of allowing the state governments free reign to impose their own emergency authorities which would result in the oil industry having to operate under fifty different sets of rules in an emergency. For these varied reasons, both houses of Congress considered and passed the Standby Petroleum Allocation Act of 1982 (hereinafter referred to as the Allocation Act).

In essence, the Allocation Act would grant the President temporary authority to allocate crude petroleum and refined products among classes of marketers and customers if he determined that a "severe petroleum supply shortage" threatened to cause "major adverse impact on national security, the national economy, or the economy of any of the several states or regions of the United States," the Allocation Act would grant the President this authority for a period of ninety days with a sixty-day extension granted if the President, on his own, deemed it necessary to meet the objectives of the Act. There could be additional extensions with Congressional approval.

The Congress heard testimony from representatives of oil companies (majors and independents), consumer groups, state officials, and the administration. Administration witnesses argued against the particular proposed legislation as well as any standby allocation authority regardless of how it was couched. Basically, four reasons were given for their opposition. First, they argued that past experience had shown that allocation regulations aggravate rather than mitigate supply and distribution problems. The notion that a federally mandated allocation scheme can equitably distribute supplies in an orderly manner during a supply crisis is falacious. The free market, it was argued, can more efficiently respond to a scarcity of fuel than can a regulatory program administered from Washington, D.C.

Secondly, it was argued that passage of the Allocation Act and the establishment of a standby allocation authority would send incorrect signals to both the petroleum industry and to consumers. Such standby authority might indicate a willingness on the part of the Administration actually to implement allocation controls. As a result, both the industry and consumers would likely plan for petroleum supply emergencies assuming allocation controls would be reimposed. Consequently, neither the industry nor consumers would have an incentive to take the steps necessary to protect their interests on their own.

Thirdly, it was argued that the combination of emergency contingency plans developed by the Administration, use of the Strategic Petroleum Reserves, and conservation make the imposition of allocation controls unnecessary.

Fourthly, it was argued that existing laws already grant the President authority to take whatever steps are needed to satisfy fuel requirements of an energy supply emergency. The Defense Production Act and the Energy Policy and Conservation Act are commonly cited.

These arguments did not convince a majority in either house that the free market could be relied upon to ensure the satisfaction of minimum fuel requirements of all segments of society at all times in all emergency conditions. Consequently, the Senate passed the Allocation Act by a vote of 86 to 7 and the House passed it by a vote of 246 to 144. The Allocation Act was then sent to the President, whereupon he vetoed the bill and sent it back to Congress.

Significance of the Petroleum Allocation Act of 1982 for Transit Operators

Though this particular bill was vetoed by the President, it is likely that the substance of the bill will reappear in subsequent legislation given the support for standby emergency authorities by a large majority in Congress. At the very least, it can be expected that at the first sign of an imminent supply disruption, similar legislation will again be debated within the federal government. Consequently, an examination of the Allocation Act is useful in that it exemplifies the kind of legislation that would again be considered if market and political conditions were to change.

As stated in Section 276(b), the Act was "to the maximum extent practicable, provide for--

> [the] maintenance of all public services (including facilities and services provided by municipally, cooperatively, or investor owned utilities or by any State or local government or authority, and including transportation facilities and services which serve the public at large);"

Thus, mass transit systems were targeted as one of the beneficiaries of this act. This designation would allow transit systems to be included among high priority end users. In turn, the designation as a high priority end user would qualify mass transit systems for inclusion in the set of end users who could be guaranteed 100 percent of their requirements under a regulation similar to Special Rule No. 9.

Another way by which transit systems would benefit from this type of legislation is that it is intended to insure both the availability of crude to independent refiners and the maintenance of product supply to branded and nonbranded independent marketers. Consequently, transit systems which receive their diesel from these suppliers would likely have a more secure source.

The act stipulated that any program implemented for the mandatory allocation of petroleum products must include a state set-aside program. Thus, state governments would regain the federally mandated authority to designate specific consumers for receipt of a percentage of suppliers' total delivery into the state. Re-establishment of the state set-aside program would present transit operators with another opportunity to secure diesel through government fiat.

Transit systems could also benefit from whatever price controls might be implemented. The act permitted "limitations on the price of crude oil, residual oil, and any refined petroleum product", but "only if the President finds that such limitations are necessary to achieve the objectives of" this Act. It was apparent from the hearings and the wording of the Allocation Act that even those legislators who supported mandatory allocation regulations were against reimposition of price controls, except where absolutely necessary to preserve safety, health, and the general well being. It is likely that price controls will continue to be limited to extreme circumstances in future bills.

In short, the proposed standby emergency allocation authority offered transit operators potential benefits in their effort to obtain fuel in a severe shortage situation.

If the proposed legislation had become law or if similar legislation becomes law in the future, what can transit operators expect? Can transit operators rely on a new allocation act to guarantee diesel deliveries as before? The answer is "no." The answer stems from the fact that any allocation act which is passed will grant the President standby authority. This authority is to be used only at the discretion of the President. No act of Congress can force the President to utilize the emergency allocation authorities. Recognizing this factor, the question then becomes, what is the probability that the President would use his standby allocation authority? If the chances were high that the President would be willing to intervene in the marketplace, then the transit operator may be more inclined to do little in terms of taking independent actions to assure fuel availability. On the other hand, if the chances were low, then the transit operator would be more inclined to take independent precautionary steps to assure fuel availability.

The fundamental choice would have to be made by each transit system. However, it should be noted that the system operator who chooses to rely on the activation of standby allocation authorities may find himself with inadequate supplies of diesel if he is wrong. On the other hand, the transit operator who chooses to take actions assuming no allocation controls to be forthcoming, would be in no worse shape in terms of fuel availability for having done so if allocation controls were reimposed, though he might have incurred some costs subsequently found to be unnecessary.

Even if standby allocation authorities are ultimately passed into law, it is not possible to predict when in the course of the emergency the President would decide to implement controls. It is highly possible that the President would wait to see how severe the disruption became and how the market was reacting. Given the current inability of most transit systems to store fuel

for more than a few days, this delay in activating the standby allocation program could threaten the viability of the system if no precautionary steps had been taken to assure fuel availability.

The veto of the Allocation Act of 1982 underscores the need for transit operators to initiate actions on their own that will enhance their fuel supply situation. Transit operators cannot depend on possible future legislation attempts to provide them with the same kind of regulatory safety net once enjoyed under the now defunct controls. However, there does remain one place where transit operators may turn for assistance in acquiring diesel fuel--state governments.

E. Existing and Proposed State Energy Emergency Regulations

Reasons Behind State Energy Emergency Regulations

In the aftermath of President Reagan's decontrol order, many state governments moved to fill what was perceived to be a void. Many state officials questioned the ability of the free market to meet the requirements of all consumers on an equitable basis in a severe shortage situation. State officials were particularly concerned over the possibility of social services (i.e., fire departments, police departments, rescue squads, sanitation departments, and hospitals) not being able to obtain enough fuel to maintain services. There was also concern over availability of heating oil for the poor as well as diesel fuel for mass transit systems. There was concern that state governments were being asked to replace the federal government in mitigating the impact of an energy supply disruption although, few state governments had any authority by which to influence petroleum product distribution and prices. Termination of the federal state set-aside program took from the states the most significant tool they had to influence directly product distribution.

In response to these concerns, almost all states have considered some type of energy emergency legislation. Such legislative actions have taken three forms: (1) amendments to existing state disaster acts to include energy emergencies; (2) specific provisions aimed at energy emergencies within a broad energy act; or (3) specific energy emergency legislation. As of mid-1981, thirty-nine states had provided their respective governor with authority to respond to energy emergencies. Of the remaining eleven states, four had determined that their existing disaster act provided sufficient authorization to take any necessary steps in the event of an energy emergency.

Governors have generally been given broad powers to respond to an energy emergency. Typically, the Governor "may by executive order promulgate such orders, rules, and regulations for the establishment and implementation of plans, programs, controls, priorities, quotas, allocations, or other measures as he may deem necessary to meet and deal with the emergency". More than half the states have empowered the Governor with broad authority covering allocating, rationing, and conserving energy.

Identification and Summary of State Energy Emergency Legislation

State legislation initiatives can be divided into three categories: (1) general authority to respond to emergency situations; (2) authority to allocate petroleum products; and (3) authority to collect data. The following sections identify and summarize the energy emergencies legislation that have been considered by the various states. Not all of these initiatives have become law. They are presented to illustrate the concerns expressed by state officials as well as the type of legislation which may be passed into law.

- General Emergency Authority Legislation

Twenty state legislatures have proposed or have in place provisions to allow the Governor of their respective states to take action during an energy emergency. These states and their legislation are presented in Exhibit 1.

EXHIBIT 1

STATE ENERGY EMERGENCY LEGISLATION

State	Description of Bill
Arizona	Defines petroleum supply emergency.
	Proposes specific state actions for dealing with emergencies.
California	Amends previous list of conditions that determine a state or local emergency or economic disaster.
Colorado	Defines fuel emergency.
	Grants Governor authority to declare emergency, to develop and implement conservation and fuel reduction programs.
	Grants Governor rule-making and subpoena powers.
	Restores powers to Governor and Fuel Conservation Policy Council which were repealed on February 1, 1981.
Georgia	Grants Governor civil defense authority during emergencies. Final law is diluted version of original bill.
Hawaii	Grants Governor authority to impose controls during energy supply interruption without legislative hearing.
Indiana	Authorizes Governor to declare energy emergency, to exercise powers related to allocation, priority deliveries, conservation measures.
	Authority limited to sixty days, which can be renewed with legislative approval.
	Defines energy emergency as exsiting or projected shortfall of at least eight percent of energy source, if short fall jeopardizes life, health, or property.

STATE ENERGY EMERGENCY LEGISLATION
(continued)

State	Description of Bill
Maryland	Extends until March 15, 1982, the power of Governor to exercise certain powers during energy emergencies.
Mississippi	Authorizes Governor to subpeona witnesses and data during energy emergencies.
	Creates state allocation office and set-aside program.
Montana	Amends Governor's energy emergency supply powers.
New Jersey	Prohibits "price-gouging" of heating oil when Governor declares "abnormal shortage".
	Grants state DOE powers to initiate fuel oil service in emergencies.
	Creates energy emergency preparedness committee to advise state DOE regarding product allocations.
	Freezes home heating oil credit policies to those that existed during 1978-1979 heating season.
New Mexico	Extends energy emergency powers act until July 1, 1983.
New York	Grants priority status to certain emergency personnel during fuel emergency.
North Carolina	Allows Governor to accept related to energy emergencies granted to him by federal government.
North Dakota	Grants Governor authority to declare "energy supply alert" and "energy emergency" and to develop emergency action plans.
Oregon	Directs state energy office to prepare energy emergency contingency plan.
Pennsylvania	Defines Governor's authority during energy emergencies.
Utah	Establishes comprehensive emergency management organization.
Vermont	Creates emergency advisory council. Extends Governor's powers during an energy emergency until June 30, 1983.
	Changes state energy emergency plan.
Virginia	Authorizes Governor to redirect five percent of monthly supplies within a state.
	Substitutes "emergency" for "disaster" as trigger for activating Governor's emergency powers.
Washington	Establishes emergency powers for Governor.
	Permits Governor to delegate limited authority to local governments during energy emergencies.
	Extends authority until June 30, 1985.

- Authority to Allocate Petroleum Products

Nine states, including several that have granted the Governor authorization to respond to energy emergencies, have examined state allocation of petroleum products. Measures considered range from state adoption of the set-aside program that had been part of the federal allocation regulations, to a resolution (by Rhode Island) that Congress develop a New England strategic petroleum reserve. Massachusetts has considered a state strategic petroleum reserve. The complexion of the allocation legislation varies by state, depending upon historical experience with supply interruptions and critical petroleum products for the state. Exhibit 2 summarizes legislation that has been considered in the area of petroleum product allocation.

EXHIBIT 2

STATE PRODUCT ALLOCATION LEGISLATION

State	Description of Bill
California	Enables state set-aside program to continue, unless pre-empted by federal law.
	Includes aviation fuel in set-aside program.
Iowa	Allows stand-by authority for energy policy council director to establish set-aside programs during energy emergencies.
Maryland	Transfers state fuel allocation authority from comptroller's office to natural resources department.
Massachusetts	Requires prime suppliers to provide at least the same amount of oil, including home heating oil, to independent oil dealers as they did last year.
	Creates underground state strategic petroleum reserves.
Minnesota	Establishes state set-aside programs for gasoline and distillate. Levels would be three percent for gasoline and four percent for distillate. Expires on June 30, 1983 unless Executive Order extends it.
New York	Extends stand-by authorities for three percent set-aside program and monthly reporting requirements.
Rhode Island	Asks Congress to develop ten to twenty million barrel strategic petroleum reserves for New England.
	Establishes a state set-aside program.
Texas	Permits State Oivision of Disaster Emergency Services to allocate gasoline.
	Requires that, based on county increases in consumption, the Texas Energy and Natural Resources Advisory Council answer inquiries and handle applications for set-aside.
West Virginia	Forbids inequitable product distribution during an energy emergency.

- Authority to Collect Data

Data collection efforts are an integral part of the allocation programs described in Exhibit 2. In addition to these legislative initiatives, eight states have proposed specific data collection efforts for planning purposes. These range from twice monthly reports from prime suppliers in the state of Maine, to long-range supply, demand, and distribution reports in the state of Washington. Specific legislative initiatives that relate to data collection are outlined in Exhibit 3.

EXHIBIT 3

STATE DATA COLLECTION REQUIREMENTS

State	Description of Bill
Delaware	Establish energy planning task force which would develop long state energy policy.
Hawaii	Require state public utility commission to report to the Governor every two years on energy supply and demand trends.
Maine	Grants authority to state Office of Energy Resources to collect semi-monthly multiple product delivery data from prime suppliers.
	Requires oil distributors to file detailed data reports with state energy resources department.
Montana	Enable Governor to monitor supplies and demand during energy emergencies.
New York	Allows energy master plan forecasts for state energy demands.
Ohio	Sets procedures for developing long range energy forecasts.
Washington	Grants data collection authority to state energy office.
	Requests that state energy office prepare and update energy contingency plans.
	Requires that energy office prepare long range report on energy costs, conservation, production and distribution every two years.

Impact of State Regulations on the Petroleum Industry

The replacement of one set of federal controls with many sets of state controls has not been well received by the petroleum industry. Most major product suppliers--many of whom deliver to mass transit systems--market in more than one state. They see numerous problems arising from the prospect of having to operate under different sets of regulations in a crisis environment. Concern has been so great as to lead some suppliers to consider withdrawing from marketing in various states in times of shortages. Ironically, this is the kind of action states want to prohibit through regulations.

Because the country has never experienced an energy shortage where many state laws have been in place in lieu of federal law, it is difficult to predict the behavior of petroleum product markets. Yet, it is safe to predict some confusion in the market place if all the states chose to exercise newly established emergency authorities. The possibility of such confusion has caused most of the major domestic refiners to favor some sort of federal standby petroleum allocation authority. In fact, many of the major refiners joined the ranks of those people who argued for passage of the Allocation Act of 1982, in large part, to prohibit individual state initiatives.

The Allocation Act, which was vetoed, included a section that specifically addressed the issue of preemption. It was stated in Section 280(a) that "enactment of this part supersedes and preempts any provision of any law or regulation adopted or promulgated by a state or any political subdivision thereof to the extent that such law or regulation provides for the pricing or allocation of any petroleum product". There were only two exceptions to this preemption clause. The President could have, by rule, exempted from preemption "classes or categories of [state] laws and regulations" which he found preserved a significant state or local interest, did not "unduly burden interstate commerce" and did not impede the operation or the achievement of the objectives of the Act. The second exception involved the Governor of any state notifying the President of his intent to implement, under state law, a state set-aside program where a state set-aside program was not already established pursuant to federal regulations issued under Section 274 of this Act. This exception simply meant that a Governor could implement a set-aside plan even though the President had not activated his standby authority. However, the Governor was not free to act on his own. He would have to submit a request to the President after which the President would have ten days to approve or reject the request. If the President rejected the request, the state set-aside would not be exempted from Section 280 of the Act and therefore, would be prohibited. Of course, these provisions became moot when the Allocation Act was vetoed by the President.

Impact of State Regulations on Mass Transit Systems

Mass transit operators may find comfort in the fact that state governments are showing a willingness to step into the regulatory role formerly held by the federal government. However, potential problems exist. First, developing and passing legislation is different from establishing implementation procedures. At this time, very few states have developed procedures by which state set-aside or other allocation authorities would be implemented. A more substantive problem exists for mass transit systems. In order for the state

III. SUPPLY DISRUPTIONS: THEIR EFFECT ON DIESEL AVAILABILITY AND PRICES

A. Purpose/Introduction

The purpose of this section is to present illustrative examples of the impact supply disruptions may have on the price of diesel fuel. Price has been selected as the focus for examination because, in a free market, it is the price which reflects both the scarcity of supply and the strength of demand. Price also serves as the sole allocating mechanism; the consumer who is willing to pay the highest price will obtain the fuel. Simply, there are no regulations determining how much product a marketer must sell to a given consumer and at what price. Each potential purchaser must decide for himself the price he is willing to pay for fuel.

During normal times, each transit operator negotiates contracts with a supplier. This contract obligates the supplier to deliver to the transit operator a certain volume of diesel at a given price at predetermined regular intervals. Price increases during the course of the contract period are limited by an escalation clause. In a free market, the transit operator can seek out the supplier offering the lowest price and best terms.[6] The contract guarantees the availability of the required volume of fuel when it is needed.

In abnormal market conditions caused by a sudden supply interruption, force majeure clauses may be activated, drastically threatening supply security. In a free market response to an emergency, there is no EPAA or Special Rule No. 9 to replace the abrogated contract.

At this point, the transit operator must make decisions concerning steps he is going to take to secure the necessary fuel. The transit operator's task is easier if he has an idea of what is likely to happen in the energy market. This section is intended to provide the transit operator with information concerning what he can expect to see in the fuel market immediately before, during, and after a major supply disruption.

B. Historical Perspective on Price Behavior

Introduction

Before President Reagan's decontrol order in January 1981, the crude oil market was characterized by price "tiers." Different prices were charged for different crudes. That is, under controls, the price of crude oil was determined by: whether it was pumped from a foreign well or domestic well (if domestic, was it in the lower forty-eight states or Alaskan North Slope); whether the drilling operation involved a large well or stripper well and the date on which the oil was pumped.

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[6]Terms generally include payment procedures, allowable price escalation, delivery schedule, and method and length of contract.

Because the market is now decontrolled, the price behavior that would be expected in a future disruption does not parallel the price behavior of previously-controlled domestic oil during past oil disruptions. Rather, the price behavior of world oil in a future disruption would be expected to parallel the price behavior of noncontrolled foreign crude oil in previous disruptions.

In order to assess the relationship of supply disruptions and product prices, domestic prices of diesel fuel in 1979 can be examined. Domestic price controls on #2 fuel oil had been lifted in 1976. Between 1972 and 1976, diesel prices had been subject to controls. Therefore, the impact of the 1974 disruption on diesel prices would not be indicative of the price pattern transit operators should expect to see in the event of a future disruption in a free market environment.

Impact of Crude Supply Disruptions on Crude Prices

Exhibit 4 presents official selling prices for four key crudes from 1970 through 1980.

As would be expected, the supply interruptions resulted in substantial increases in the official selling prices.[7] Other less obvious points should be recognized by transit operators.

First, though foreign crude prices went up as a result of an interruption in supply, prices did not return to pre-interruption levels after the crises had abated. That is, if prices go up due to a sudden drop in supplies, one might expect prices to drop from the peak reached in the crisis as supplies returned to pre-crisis levels. This did not happen in either 1974 or 1979. In both cases, crude prices after the interruption generally remained at the levels reached during the crisis. This pattern or "price ratchet" is clearly illustrated in Exhibit 4.

Another point that should be recognized is that an interruption in the exports of a single major oil exporting country will likely cause other countries' prices to go up. This is caused by the so-called ripple effect of a disruption. The ripple effect results when the oil companies that have been cut off seek oil elsewhere.[8] This places pressure on other countries'

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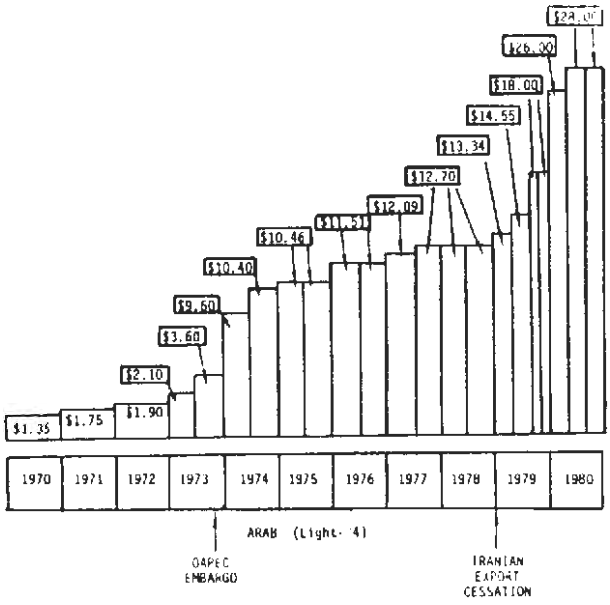
[7]There were actually several factors that contributed to the price increase in 1974 including the Arab/Israel October War, and a desire on the part of the Organization of Arab Petroleum Exporting Countries to recoup losses that they believed they had sustained in earlier years.

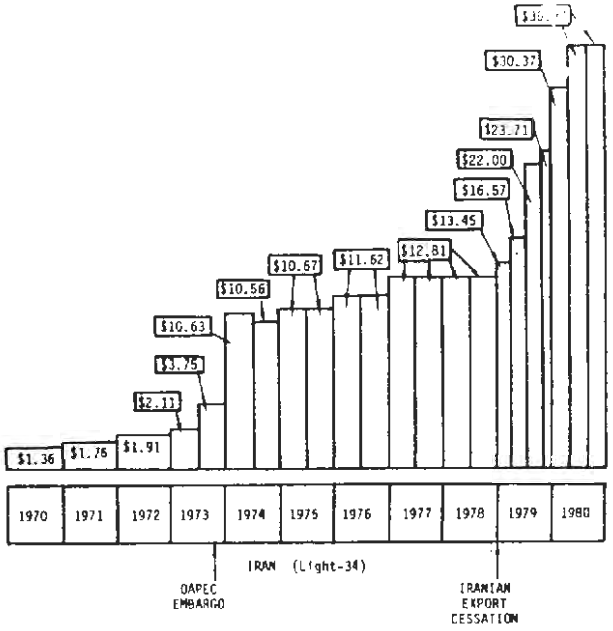
[8]An example was Japanese behavior after Iran ceased exports. Iran had been the largest supplier of crude oil to Japan. Cessation of exports by Iran caused Japanese oil companies to offer premium prices for crude on the spot market, thereby driving prices up into the low forties.

EXHIBIT 4

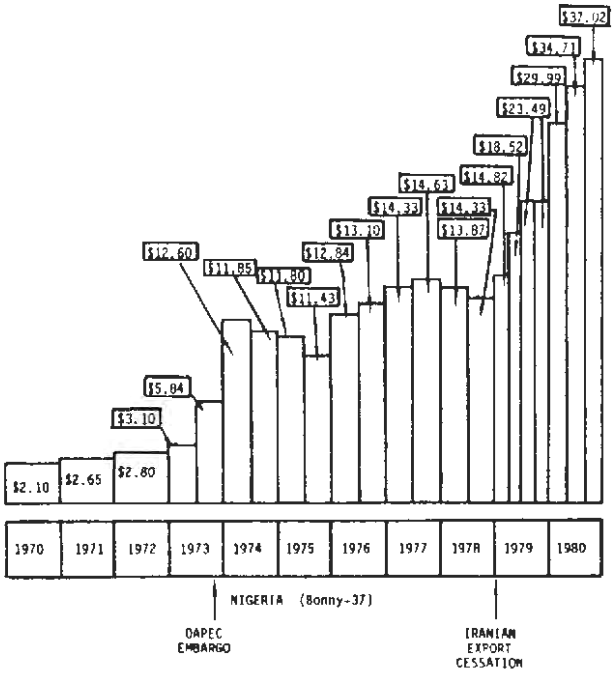
SELECTED FOREIGN CRUDE OIL PRICES

1970 - 1980

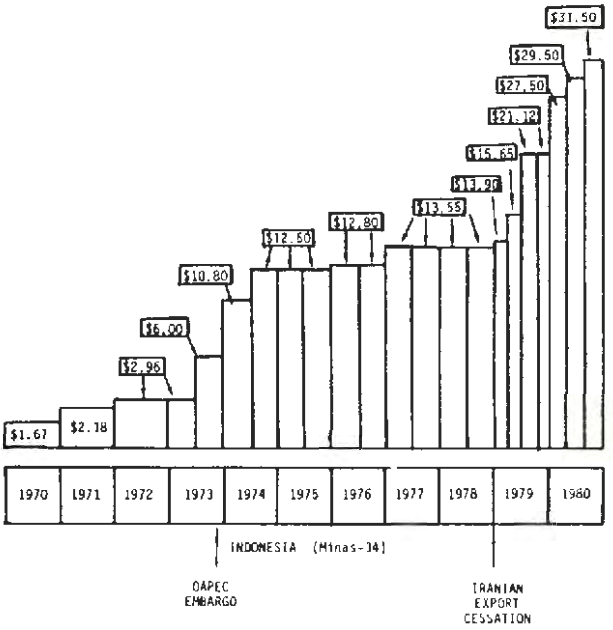




Prices from Jan 1, 1980 include $1.87 in market premiums and credit charges



Prices from Jan 1, 1977 include 2¢ harbor dues.



SOURCE: Petroleum Intelligence Weekly, September 1, 1980.

prices. Exporting countries who wish to take advantage of the surge in demand for their oil may abrogate existing contracts and place the oil in the international spot market where they can realize a higher profit.[9] Thus, the shutdown of a single exporting country may initiate a chain of events that results in higher prices for all grades of crudes produced in all exporting countries.

Diesel Prices

Higher crude prices were subsequently reflected in higher diesel prices in both 1974 and 1979. However, controls did not permit the full pass-through of crude price increases in 1974. Consequently, our focus will be on the movement of prices in the 1979 Iranian crisis, as this experience will more likely be indicative of price behavior in a future fuel interruption.

In June, 1978, the average retail price of diesel fuel was $.54 per gallon. By January 1979, diesel was averaging $.57, an increase of $.03 in six months. By June, 1979, six months after Iran had stopped exporting crude, the average diesel price had jumped to $.79 a gallon. The year closed with diesel averaging $.91 a gallon in the United States. Thus, in the first half of 1978 when the market was responding to the Iranian cutoff, diesel prices went up $.22. In the second half of the year, by which time the market was supposed to have adjusted to the loss of Iranian oil, prices continued to rise another $.12 a gallon over June's price. Thus, in 1979, the average diesel price in the United States increased by $.34 a gallon, an increase of about 69 percent.[10]

As in the case of crude oil prices, diesel prices experienced a sharp increase during the supply problem and remained at the higher level after the market had adjusted to the absence of Iranian oil. In fact, diesel prices continued to rise through 1980. Thus, price increases brought about by the Iranian cutoff did not disappear after the crisis abated. Diesel customers including jobbers, retailers, and consumers were left with sustained higher prices.

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[9]In 1979, Indonesia abrogated contracts with several major U.S. refiners in order to sell their oil on the spot market. Pressure had been placed on Indonesia by Japanese firms which had been heavily dependent on Iranian crude oil. Normally, the spot market accounts for only about five percent of the crude oil traded on the world market. Under shortage conditions, the amount can rise to about eight percent. The impact of spot prices on market perceptions in a crisis is disproportionate to the volume of oil traded in the market.

[10]Primary source for prices is the Central Intelligence Agency. Secondary source is the Energy Factbook, November 1980, p. 292.

Significance of Expected Price Trends for Transit Operators

In a free market, the price of diesel reflects all costs to the seller (with the crude oil cost accounting for approximately 49 percent of the total price), taxes, and margins. Price also reflects the willingness of consumers to purchase diesel. In a market characterized by declining supply, the diesel consumers may have a basic choice: either find an alternative fuel and stop purchasing diesel or increase their bid in the competition for whatever supply of diesel is still available. If the consumer does not have the ability to substitute an alternative fuel, this choice does not exist. Unfortunately, transit operators fall into the category of consumers without this choice. Buses run on diesel. There is no substitute. Compounding the problem is the fact that another major user of diesel--agriculture--also has little ability to substitute for diesel fuel. Consequently, no matter how high (relative to historical prices) diesel is priced at the time of the next supply interruption, diesel prices can be expected to jump significantly.

A contingency planning effort undertaken in the autumn of 1980 illustrated the likelihood of extremely high diesel prices in the event of a supply disruption. The planning group hypothesized a world wide supply interruption of nine million barrels per day (MMBD) of crude oil beginning in January 1981 and ending in June 1981. Based on the import patterns that existed at that time, the reduction would have resulted in a loss of two MMBD to the United States after activation of the International Energy Agency's Oil Sharing Program.

The planning group modeled for expected consumption levels under business as usual (i.e., what would be expected if no interruption had occurred) conditions given anticipated prices for the major refined products. Then the group modeled for disruption consumption levels and prices. Exhibit 5 reveals reduced consumption of No. 2 Fuel Oil brought about by sharply higher prices over business as usual conditions.

This hypothetical scenario revealed the same general price pattern witnessed in both 1974 and 1979. Prices climbed and remained higher than pre-interruption levels after the interruption had ended. Exhibit 5 reveals another price phenomenon. Though the interruption was hypothesized to start in January 1981, the highest prices were not experienced until the second quarter of the year. This time lag between supply interruption and higher prices coupled with lower consumption stems from the fact that at any given time there is more than six weeks worth of crude oil and product flowing "through the system" from crude acquisition to receipt of the refined product by the end user.

EXHIBIT 5

NO. 2 FUEL OIL

	1981				1982			
	1st Q	2nd Q	3rd Q	4th Q	1st Q	2nd Q	3rd Q	4th Q
BAU Consumption (MMBD)	3.0	3.0	3.0	3.0	3.0	3.0	3.1	3.1
Disruption Consumption (MMBD)	2.7	2.5	2.7	2.6	2.6	2.6	2.7	2.8
BAU Retail Price ($/Gallon)	1.18	1.33	1.41	1.51	1.54	1.58	1.62	1.60
Disruption Retail Price ($/Gallon)	2.17	3.94	2.24	2.24	2.23	2.23	2.24	2.23

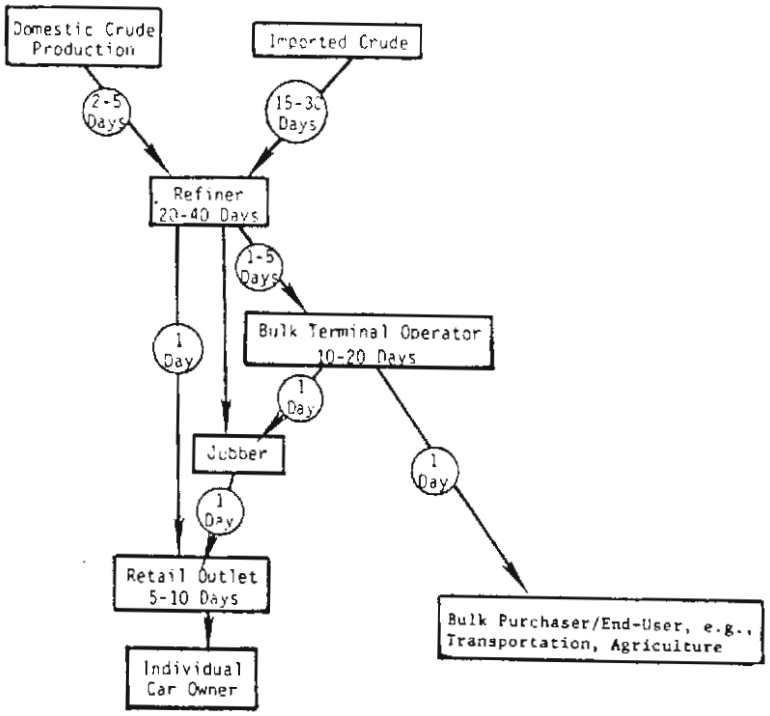
SOURCE: Draft Contingency Response Plan to a Moderate Interruption of Petroleum Imports, DOE, March 1981, p. 1-10.

The flow and elapsed time is illustrated in Exhibit 6, indicating that the physical drop in supplies might not reach the market for at least six weeks after the interruption. This lag time could be reduced substantially depending upon stock decisions made by refiners, bulk terminal operators, and other jobbers with storage capacity. These marketers could reduce deliveries immediately in anticipation of the coming shortage or they could continue deliveries at near normal levels while they ascertain the nature of the interruption and determine appropriate market strategies.

In short, at the earliest stage of a supply crisis, diesel prices will begin to rise. At the same time, there will be much confusion in the market. Yet, under the uproar, supplies will likely continue at near normal levels at least for several weeks. Prices will probably not reach their peak until the crisis is into its third or fourth month. It is in the earlier stages of the emergency when transit operators must act. Planning for an emergency, with all the decisions this effort entails, should be completed before an interruption occurs. On the day of the supply interruption, the transit operator should be completely involved in implementing decisions and plans already made. The transit operator, who at this time is identifying his options and deciding the cost and benefits of each, will be in a highly vulnerable position. Supplies will become more difficult to obtain and prices will be climbing.

EXHIBIT 6

OVERVIEW OF DIESEL SUPPLY SYSTEM AND
APPROXIMATE TIME REQUIRED FOR DISTRIBUTION



SOURCE: Cabot Consulting Group estimates based on DOE stock data and conversations with industry staff.

C. Summary

Examination of historical prices has revealed that crisis-induced price rises are not reversed with the end of the interruption. This aspect of fuel shortages must not be lost on transit authorities. The lesson to be learned is that fuel supply interruptions should not be perceived of as simply a short-term problem that can be solved with short-term solutions. In the long run, viability of the transit system will depend upon its ability to obtain adequate fuel supplies. In a free market, this ability is determined solely by availability of funds; that is, purchasing power. Thus, a transit system which responds to a fuel supply interruption with short-term measures may find itself financially strapped after the crisis is over.

Transit authorities must be prepared to see even sharper price increases than in the past shortages. This stems from the fact that refiners/importers will be more willing than they were in 1974 and 1979 to go to the international spot market in hopes of obtaining substitute supplies of crude oil. This willingness to compete on the spot market has resulted from decontrol. Under controls, refiners were unable to recoup 100 percent of their additional costs. About 40 percent of the additional cost had to be absorbed by the refiner. This restriction, plus the fact that the Crude Oil Entitlements Program forced major refiners to sell a share of their crude to independent refiners, discouraged them from seeking additional crude supplies on the world market. The regulations caused major oil companies to ask themselves a basic question: "Why should I go to the trouble of obtaining additional crude on the spot market if I have to incur additional costs and, I do not get to use it in my own refineries?"

With the end of controls, there is no longer a disincentive against entering the spot market. The U.S. consumers should benefit from this change because the major oil companies will be able to compete freely on the world market for scarce supplies. On the other hand, the oil companies will be able to pass through to the consumer every additional cent they incur in their spot market purchases.

Transit operators must be prepared to see price increases stemming from other factors besides crude cost increases. It is probable that each transaction through which the product moves will result in a greater escalation in price than would be expected under normal market conditions. Each marketer throughout the distribution chain will be attempting to cover his own increased costs, hedge against future losses, and realize a profit. Recognizing that each transaction in the marketing chain means a higher price to the end user, mass transit systems should attempt to preempt "daisy chaining" (i.e., the selling of product from jobber to jobber) by purchasing diesel directly from the refiner.[11]

The only significant factor that will work to dampen prices in a free market response to a supply crisis is the desire of diesel sellers to maintain market share in the long run (i.e. after the crisis). A seller that raises prices inordinately high relative to other sellers within the same market region will risk losing customers.[12]

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[11]Historically, the major prohibition against purchasing directly from the refiner has been the transit system's inability to store the fuel.

[12]The seller who does raise his prices higher than his competitors in a crisis is counting on the representative buyer to be both desperate for fuel and ignorant of lower prices offered by his competitors. The propensity for this sort of behavior by the seller during a shortage underscores the need for the consumer to monitor prices continuously.

IV. IDENTIFICATION OF ALTERNATIVE REMEDIAL ACTIONS

A. Purpose/Introduction

The purpose of this section is to present alternative actions and fuel market strategies that could be adopted by transportation authorities to mitigate the impact of a fuel disruption on the system's operation. Numerous studies have been undertaken which address the problem of mass transit systems in energy shortages. These studies recommended various actions that might be taken by transportation authorities and fall into four categories:

- actions to improve public information;
- actions to improve fuel efficiency;
- actions to expand system capacity or availability; and
- actions to improve fuel supply availability.

Because this study focuses on diesel fuel acquisition, the first, second, and third categories will not be addressed. Only the last category, "actions to improve fuel supply availability," will be examined.

It should be noted that many of the transportation energy contingency plans developed to date do not even address the problem of fuel acquisition. This omission stems from the existence of allocation regulations at the time the plans were developed. The planners assumed that the allocation controls would continue to provide them with a guaranteed source of fuel. Therefore, there was no need to be concerned about fuel availability. As examples, the plan developed for Minneapolis-St. Paul suggested eighteen response actions--not one of which addressed fuel acquisition. The plan developed for Memphis identified seventeen response actions--not one of which addressed fuel acquisition. A plan developed for Washington, D.C. (one of the hardest hit cities in both 1974 and 1979) proposed thirteen response actions--not one of which addressed fuel acquisition.[13]

Those studies that did analyze the problem of improving fuel supply availability generally resulted in advocating two courses of action. First, transit authorities were urged to stay in close touch with federal energy officials to insure that they received their fuel allocations and to appeal for supplemental volumes if they become necessary. Transit operators were also urged to stay in touch with state officials to insure that transit systems received a portion of state set-aside fuel. Second, transit authorities were urged to examine the feasibility of expanding existing fuel storage capacity and building new storage facilities.

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[13] Transportation Energy Contingency Planning: Local Experience, Department of Transportation, June 1979.

The first recommendation, to stay in close touch with federal energy officials to guarantee delivery of fuel under the allocation regulations is, of course, a moot point. The standby allocation authorities being debated in Congress, notwithstanding termination of controls in 1981, made this recommendation meaningless. There are no allocation regulations and no federally sponsored state set-aside program.

The second recommendation, to expand or build new storage facilities,is still a valid option and shall be included in this study. Yet, this option is very expensive and, under current economic conditions and budgetary constraints, many transit systems are not able to make the necessary capital investment.

Given the futility of the first recommendation and the expense of the second, the question remains, what actions can a transit operator take to improve his chances of having sufficient diesel fuel supplies to meet the needs of his community in an energy emergency?

B. Remedial Options

Diversify Suppliers

Under allocation regulations there was an incentive to remain with a historic supplier. Buyer/seller relationships were frozen to the extent that sellers had to continue to provide customers with their base period volume. Transit systems did not need to be concerned about continuance of deliveries from a particular supplier because Special Rule No. 9 insured that the supplier obtained fuel to sell to the transit system. Moreover, many transit systems then and now acquire their fuel through a competitive bidding process with a single contract for the entire year's diesel supply going to the lowest bidder. This process is a simple routine and can be undertaken in an objective manner. Consequently, the bidding process appeals to transit managers. The result of this process, however, is that the transit system becomes dependent on a single supplier for its fuel.

With the end of regulations, incentive to remain with a historic supplier also ended. In fact, a free market environment should induce buyers, particularly bulk buyers such as mass transit systems, to negotiate contracts with several suppliers.

A transit system should not rely on a single supplier for fuel. The transit system's viability is directly tied to the ability of the sole supplier to obtain diesel and deliver it to the system. In normal periods, the supplier may have no problems in securing diesel. In a tight market, there is no guarantee that the particular supplier, when the transit system has a contract, will be able to continue to provide the volume needed to maintain service. Under shortage conditions, some suppliers will be in a better position than others, but there is no rule to follow as far as identifying the suppliers most likely to have diesel in a shortage situation. A branded jobber may appear to be a better hedge than an independent jobber due to the former's contract affiliation with a major refiner. Yet, there is no guarantee that the refiner supplying the branded jobber will be in any better shape than the refiner supplying the independent jobber in the emergency.

One factor to consider is the supplier's storage capability. Obviously, the greater his storage capability, the more likely it is that fuel will be available. When comparing storage capability among suppliers, transit authorities must recognize the difference between owning storage facilities and owning the product being stored. A jobber may own storage facilities but lease space to another jobber or retailer. The jobber who owns the facilities does not have title to the product and, thus, cannot sell the product.

Another factor to examine is the source of the product. That is, it is worthwhile to trace the product "upstream" all the way to the crude oil source. This information is necessary to ensure that diversification of suppliers is actually being achieved. Basic questions to be addressed are:

- Which refiner supplied the jobber with diesel?
- What is the source of crude supply for the refiner?
- What percent of the refiner's crude oil is imported?
- From which countries does the refiner import the crude?

Some of this information can be obtained from the supplier. Information of refiners' import dependence can be obtained from the DOE. The DOE can also provide information on the identity of oil exporting countries supplying a particular refiner.

The argument for diversification implies that there are other factors besides price that should be taken into consideration when supply contracts are awarded. It is recognized that adding other variables to the decision complicates the award process. It is also recognized that going to the added trouble of negotiating contracts with several suppliers during an oil glut appears to be unnecessary. On the other hand, it should be recognized that a glut can disappear in a matter of weeks as a result of a major oil supply disruption and most transit systems maintain less than a two-week fuel supply. Moreover, it is more difficult to begin diversifying suppliers when a crisis is imminent or has already started than it is under normal market conditions.

Continuously Track Diesel Prices

Operating in a free market environment, particularly during a shortage, requires an activist approach to fuel acquisition. This activist approach is necessary because the degree of success in obtaining adequate fuel supplies will depend in part on an understanding of the market. Who has diesel to sell and who does not? How much is a gallon of diesel being sold for in a given market? Both are basic questions that need to be continuously asked throughout the course of a shortage.

The most obvious market indicator is price. Careful tracking of diesel prices throughout the crisis will provide the transit system with an indication of the severity of the shortage, the demand for diesel by other consumers (i.e., the willingness on the part of transit systems' competitors in the diesel market to pay a given price), and the "reasonableness" of the price being paid by the transit system.

Purchase Diesel Fuel on the Spot Market

The standard procedure of awarding an annual contract to a single supplier precludes the need to seek additional volumes under normal conditions. Yet, the contract is based upon two assumptions: (1) the volume to be delivered will satisfy the requirements of the transit system, and (2) the supplier will have available to him the specified amount to pass through to the end user (i.e., the transit system). If service by the transit system was to suddenly rise, thereby increasing the fuel requirements, the volume contracted for may become inadequate. If the volume of diesel specified in the contract is not available to the supplier and he is forced to reduce deliveries, service by the transit system may be impaired.[14] Both these conditions could occur in a major oil supply interruption.

In the event that the contract arrangement proves inadequate to satisfy fuel requirements, the transit system may consider entering the spot market. Spot purchases could be used to supplement the volume received under contract.

Spot market transactions involve the purchasing of product on a one-time basis. Most transactions of this nature take place at the major ports (i.e., terminalling areas), most notably New York, New Orleans, and in the Caribbean.

Entry into the spot market is not difficult, though most transit systems may find it easier and faster to work through a broker. Brokers arrange for a shipment of diesel to be moved from New York or the Caribbean to any city in the United States.

Spot prices are always higher than contract prices in a shortage environment. Most buyers in the spot market are satisfying shortage requirements. Consequently, bidding on the spot market can be intense, forcing prices up sharply. Not only will the purchase price be higher in the spot market but

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[14]Under the Uniform Commercial Code, a seller is required to fulfill his contractual obligation as best he can. However, if conditions arise that prevent the seller from meeting his full obligation, he must allocate available supply among his customers in a "fair and reasonable" way (i.e., on a pro rata basis). Thus, a diesel supplier cannot cut off a transit system entirely while maintaining deliveries, even at reduced amounts, to other customers. Yet, transit operators should not put too much reliance on the seller's requirement to reduce deliveries on a pro rata basis.

One should note that a direction to allocate pro rata is far from an explicit and rigid set of allocation rules. The seller may choose to prorate based upon historic deliveries, historic contract amounts, current needs, current contract amounts, and, possibly, other grounds. By choosing one or another scheme to establish his proration, the seller may be able to favor one set of customers over another to a considerable extent.

The seller's flexibility in determining his pro rata scheme may work in favor of or against the interest of mass transit systems. J. White and R. Summers, Uniform Commercial Code, p. 135, 136 (1980).

the end users will also have to cover the cost of transportation and the broker's commission. Though budget constraints may preclude spot purchases, nonetheless, it is an option open to transit systems.

Another problem with this option may arise from inadequate storage facilities at the transit system. Spot purchases are normally 50,000 barrels (i.e., 2,100,000 gallons) or more. The buyer must be able to receive this volume all at once. Smaller spot purchases can be made, but the cost on a per-barrel basis would likely be higher. Joint ventures in the spot market in which two or more transit systems buy the diesel and then divide it up among themselves may offer a viable approach.

Unfortunately, price information on a real-time basis during a shortage can be difficult to obtain. Most DOE price surveys have such a long lag time as to be obsolete by the time of publication. Better sources of price data are the American Petroleum Institute (API), the Lundberg Newsletter, and Platts Oilgram. API gathers crude and product prices and publishes this information on a weekly basis. Both the Lundberg Newsletter and Platts Oilgram are also published weekly and provide price information--wholesale and retail--on crude and refined products.

However, the best source of price information is the supplier himself. Telephone calls to several suppliers will provide an indication of the current price range. Published prices should be used to supplement this information.

The underlying point being advocated in this option is that the more informed a transit operator is on the current oil market conditions, the greater his chances are of securing diesel fuel at reasonable prices--given the shortage conditions.

In summary, the time when transit systems could remain aloof of the energy market and rely on the regulations to provide fuel has passed. Transit systems must be prepared to compete on the open market for whatever diesel is available. The ability to compete will be enhanced by the continuous tracking of diesel prices as a barometer of availability of supply and strength of demand.

Establish Centralized Emergency Fuel Purchasing Agent

Business as usual methods of acquiring fuel in a free market response to an energy emergency will likely prove to be inadequate. Standard procedures for letting requests for bids, examining the bids, and deciding which to accept takes valuable time. In many of the larger mass transit systems, several parties are involved in the fuel acquisition process--maintenance departments, operation supervisors, and boards of directors. This process may work acceptably under normal conditions. However, in a crisis atmosphere when all end users are competing on the open market for fuel, this process will likely hamper the system's ability to compete effectively.

The transit system needs to be able to enter the fuel market on an equal basis with its competitors. This can be done if the transit system authorizes one specific office or person to make emergency purchases of fuel.

The transit system should establish a centralized emergency fuel purchasing agent. This agent would be responsible for maintaining liaison with federal and state officials as well as major diesel suppliers servicing the region. He would be responsible for continuously monitoring the fuel market with an aim towards identifying possible sources of diesel at reasonable prices. The agent would have the authority to bid on supplies of diesel, negotiate an agreement, and sign a purchase contract. The fewer restrictions there are on this authority, the more able he will be to take advantage of whatever opportunity arises.

While this option runs counter to the checks and balances found in most companies, checks and balances can lead to delays and shutdowns in a severe emergency.[15]

Trade in the Futures Market

Future delivery of diesel fuel or almost any other commodity can be assured if one is willing to speculate. This speculation involves trading (i.e., buying) in the futures market. The buyer obligates himself to purchase a fixed amount of diesel at some future date at a price higher or lower than the than current price. In reality, the buyer is purchasing the option to buy the diesel at the predetermined time and price. By doing so, the buyer is speculating that the market price of a gallon of diesel at the specified future date will be higher than the price at which he bought his option. If this happens, the buyer has the option either to take delivery of the fuel or to sell his option to another buyer at a price higher than the original option price but lower than the then current market price. Either way, the original buyer realizes a profit on his investment. If the buyer chooses to take delivery, he has obtained fuel at a price lower than the then existing market price and, consequently, has saved money. If the buyer decides to sell his option, he realizes a profit.

Investing in the futures market is a form of speculation and speculation can lead to financial loss. A financial loss is sustained if the market price at the time the option comes to term is lower than the original purchase price. In this case, the buyer still has the option to take delivery or sell the option, though either way a loss will be sustained.

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[15]The U.S. federal government has recognized the need to permit its sole crude oil purchasing agent--the Defense Fuel Supply Agency (DFSA)--greater flexibility and is examining ways in which the DFSA could more effectively compete on the international crude market. The DFSA is charged with the responsibility for acquiring crude oil for the Strategic Petroleum Reserve. In the past, its ability to take advantage of softening crude prices has been hampered by federal rules, procedures, and other bureaucratic restraints. Those kinds of restrictions could also hamper transit officials in their attempt to compete on the open market for diesel.

Though there is a risk involved which should not be minimized, trading in the futures market is still a viable option to transit systems. The attractiveness of this option will be determined by the value one places on guaranteeing future deliveries of diesel. In short, the question becomes: Is the risk of higher costs balanced by the security of having a guaranteed fuel supply?

A disadvantage to this option is that it requires a relatively large capital investment. Though this is a one-time expense, it may strain the existing budget. A transit system can reduce the burden of this capital expense by buying on margin.

Trading in the futures market is an on-going program. At regular intervals the transit system will need to decide whether to take delivery of the fuel or sell the option to buy. It will also need to decide the volume of fuel and the price in the succeeding investment. This process requires a commitment by the transit authority to assess continuously the crude oil and diesel fuel markets.

In summary, trading in the futures market involves risk, but it yields a degree of security in guaranteeing future delivery of diesel fuel. Though this option may at first appear to be too risky for a public service entity, it should be recognized that trading in the futures market is probably less risky in terms of suffering a financial loss than is the more conventional option of building storage capacity. There is no guarantee that the cost of building the storage facility, the cost of purchasing the diesel, and the holding costs will be recovered. The cost not recouped by the storage option is the price paid for the security inherent in having an assured fuel supply. The same can be said of the futures market investment option. Whatever loss is sustained in the market should also be perceived as the insurance premium paid on the security inherent in having a guaranteed supply of fuel.

Pay a Higher Price Now for Guaranteed Deliveries Later

Another option exists that is similar in nature to trading in the futures market but does not involve a formal market speculation and a large one-time capital investment. This option consists of negotiating an agreement with one or more major suppliers whereby the transit system agrees to pay more than the seller's asking price in return for guaranteed deliveries by the seller in a tight market situation. In short, the transit system is buying what it received for free under regulations--preferential treatment by suppliers in a supply crisis.

Agreements can be arranged whereby the supplier agrees to deliver a fixed volume--say a ninety day supply of diesel--to the transit system at the outset of any supply disruption or over a period of time during a supply crisis. The price charged to the transit system for this diesel would be the existing market price at the time of delivery minus the premium paid earlier by the buyer. The advantage of this arrangement to the buyer (i.e., the transit system) would be the availability of fuel in a crisis. Moreover, some or all

of the additional funds paid out earlier would be recouped by paying lower than market prices during the crisis. The advantage to the seller would be having access to greater profits under normal market conditions. At the outset of the supply crisis the seller would be free to follow market prices, possibly retain some portion of the incremental income received earlier, and, even after the agreement has expired, will likely have a steady customer. Moreover, from the seller's point of view, he is hoping that no supply emergency arises, in which case no costs would be rebated to the buyer.

This is a rather unconventional method of negotiating fuel supply contracts. Paying a premium price may be perceived of as totally unnecessary or even wasteful in a time when the petroleum industry is experiencing a glut rather than a shortage of product. Yet, the incremental cost can also be perceived of as payment on an insurance policy.

A potential problem associated with this option is more political in nature. An advantage of the standard bidding process is its objectivity in that the award usually goes to the lowest bidder. The bids are sealed and there is little room for accusations of prejudicial decisions. This option involves active negotiations by the transit system and will ultimately result in a subjective decision as to which supplier(s) will receive an award. Such a decision-making process is more readily subject to allegations of bias.

A substantive problem tied to this option is that it could result in the transit system becoming dependent on one supplier. As discussed earlier, dependence on a single supplier should be avoided. Consequently, if this option is adopted, such arrangements should be reached with several suppliers.

Build or Expand Storage Facilities

The only option that has already received much attention by transit systems concerns storing diesel for emergency use. Three methods exist by which fuel could be stored: (1) build new storage facilities, (2) lease space in existing facilities, and (3) purchase surplus tankers. Storing fuel will guarantee fuel availability (for some period of time) and serve as a hedge against rapidly rising prices in an emergency. The attractiveness of storing diesel fuel is determined by the size, cost, and location of the storage facility.

Of the three storage options, building facilities is the most expensive but provides the most flexibility. That is, the transit system can build a facility of any size wherever space is available. Buying surplus tankers would likely be the next most costly option followed by leasing space which would be the least costly option. However, there is a factor that makes building a storage facility more attractive than long-term leasing. Federal funds can be used to pay for the building of storage facilities, but they cannot be used to pay rental fees. Consequently, the cost to the transit system of building may not be much higher than leasing.

The feasibility of storing fuel will be largely dependent on the transit system's ability to make a relatively large capital investment. To some extent, this investment would be self liquidating if fuel prices were to

rise. On the other hand, it is doubtful that the cost of storing fuel would ever be fully recovered and the decision on storing fuel should recognize this fact.

One storage option could reduce the cost to a single transit system of storing fuel. This plan involves a cooperative arrangement among several mass transit systems in a specific geographic region. Several systems could jointly build, buy, or lease storage space. The fuel available to each system in an emergency would be proportionate to its investment. The only contentious issue related to this plan could be the selection of the storage site (assuming this choice needs to be made). Because rapid access to the stored fuel is a critical factor, the site would have to be equally attractive to all parties involved.

There is no general rule concerning the feasibility of storing fuel. Each transit system must undertake its own cost/benefit analysis. It can be said that nothing provides a mass transit system as much security as having supplies stored for emergency use. Unfortunately, it can also be said that nothing is as expensive as having supplies stored for emergency use. The expense, plus the fact that there is no guarantee that the volume stored will be adequate in the emergency, has historically led transit authorities to consider other options.

V. CONCLUSION: ALTERNATIVE STRATEGIES

Transit operators have the option of adopting one of two strategies pertaining to fuel acquisition in an energy emergency. One strategy is based on the assumption that the state Governor and/or the President will not allow transit systems to suffer such shortages that would threaten the viability of the systems. This strategy assumes that the Governor and/or the President will place a higher priority on satisfying the public's need for mass transportation in an energy crisis than on maintaining adherence to a free market philosophy. This strategy also assumes that diesel prices will be subject to new state or federal price controls or that price increases could be passed on to passengers. In short, recognizing the importance of mass transit systems to the wellbeing of citizens, regulations will be reimposed by either the Governor or the President to ensure the continued delivery of diesel. Consequently, it is not necessary for transit systems to allocate funds and labor to develop and implement contingency plans aimed at enhancing supply availability.

The second option is based on the assumption that the President will not abandon his belief in the free market's ability to most efficiently allocate fuel in an energy crisis. No matter how severe the shortage becomes, reimposition of allocation and price controls will only aggravate the dislocation and cause inefficient distribution of supply. If the President maintains his opposition to reimposition of allocation and price controls, not only will the standby authorities that may be available to the President not be activated, but the President may also prohibit state Governors from implementing their own emergency programs.

Under these conditions, mass transit operators will have to obtain diesel supplies and negotiate prices entirely on their own. No federal or state programs will provide transit operators with a guaranteed supply of diesel at a fixed price. Those transit systems whose managers succeed at obtaining diesel supplies at affordable prices will continue to operate. On the other hand, inability to obtain supplies and/or budget problems could result in a reduction in service.

Transit operators adopting the second strategy will be more likely to take steps to enhance fuel availability. These steps could include:

- diversifying suppliers;
- purchasing diesel fuel on the spot market;
- establishing a centralized emergency fuel purchasing agent;
- trading in the futures market (i.e., buying diesel futures);
- paying a higher price now in return for guaranteed deliveries later; and
- building or expanding storage facilities.

The second strategy accepts the possibility that at some point during an emergency, the Governor could activate state-wide allocation controls or a state set-aside program on his own authority. There is also the possibility that in a supply disruption of catastrophic proportions (such as the loss of

all Persian Gulf oil), the Administration could reverse itself and favor short-term controls. Recognition of this possibility, however, does not preclude the need to take one or more of the remedial steps identified above. It is not possible to determine how long a Governor or the President may wait after the supply interruption has occurred before making the decision to activate emergency authorities. Therefore, at the very least, it seems prudent to take actions which might prove to be stopgap measures.

The first strategy of relying on the reimposition of allocation and price regulation is a low cost, but high risk strategy. It is low cost because the transit system needs not allocate funds and manpower to developing emergency actions and programs. On the other hand, not initiating such efforts runs the risk of being left without adequate supplies of diesel in the event emergency authorities are not activated. In such a case, the strategy becomes a high cost strategy as a result of being forced to reduce service due to inadequate fuel supplies.

The strategy of undertaking precautionary steps to enhance fuel availability is initially a high cost but low risk strategy. Costs are incurred which could be deemed unnecessary if an energy supply disruption were never to occur. Yet, these costs are reducing the risk of exhausting fuel supplies in the event a disruption does occur. During an emergency, the cost incurred prior to the crisis is offset by the benefits accruing from having adequate fuel supplies.

Not all remedial actions are capital intensive; diversifying supplies, actively tracking suppliers and prices, and establishing a centralized emergency fuel purchasing agent would enhance a transit system's fuel position without necessitating the expenditure of large sums of money. Thus, risk can be reduced at a relatively small expense. Yet, these actions do not, by themselves, offer the security of having fuel in the tank or coming down the pipeline. Actions which result in having assured access to fuel supplies require a sizable capital investment. Each transit operator has to decide for himself the cost and risk he is willing and able to tolerate.

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