

The major response strategies require federal and state actions. However, cities should be able to estimate their increased operating costs (for fuel) and public assistance costs (welfare) and work with federal and state authorities to identify sources of funds and develop strategies to minimize the economic problems.

Local city data, when aggregated, can be used to assess the national benefits of various energy response strategies. Most of the cities that participated in the GM UEA study have expressed an interest in continuing to improve their ability to adapt to supply problems and a willingness to participate in specific studies or demonstrations.

From GM's viewpoint, the UEA study was of major value because it provided a better understanding of the needs of local governments and it provided data to assess alternative energy strategies and identify petroleum product needs.

The insights developed have been particularly valuable in our efforts to identify the steps that can be taken to moderate the impact of an energy shortfall and enable the economy to recover rapidly when the shortfall is over.

We hope that this program can serve as an example to encourage other industries to work with local governments in developing energy contingency response. The findings of this study have been used to develop response strategies that should minimize the economic impacts and avoid the problems created in 1973 and 1979 by allocations and other energy mandates.

Although these strategies have received positive response from representative elements of industry, we are continuing to seek ways of reaching other groups that would be affected by an energy shortfall.

Planning Ahead for Energy Emergencies: Whose Job is it Anyway?

Ronald L. Winkler

It is a pleasure to be here today to discuss the federal viewpoint on energy contingency planning for transportation in urban areas. My discussion reflects a number of the themes that I would like to stress today. These include issues such as responsibility, cooperation, innovation, and looking ahead not backward, to find solutions for today's problems.

My job at the U.S. Department of Energy (DOE) is Deputy Assistant Secretary for Energy Emergencies. As I have frequently pointed out over the last year and a half, this is a good time to be in charge of energy emergency planning--when we have a surplus of natural gas, a glut of oil, and hundreds of years of coal.

Joining the DOE in September 1981, I was the beneficiary of a number of energy policy initiatives that greatly improved our nation's energy emergency preparedness. Perhaps the most important of these initiatives was the removal in January 1981 of the remaining domestic price and allocation controls on petroleum. Some analysts now consider this action the single most important element in the chain of events that has led to a dramatic decline in world oil prices and a decline in the power of the Organization of Petroleum Exporting Countries' (OPEC) cartel.

In addition, storage of oil in the Strategic Petroleum Reserve (SPR) was increased, and a number of other general energy and economic measures were instituted which provided incentives for sound development and conservation of energy.

The overriding goals of our energy emergency preparedness program are to reduce the nation's vulnerability to energy supply disruptions and to alleviate their impacts on the nation. Previous

policies of oil allocation, price controls, and mandatory demand-restraint measures have been abandoned because in some instances they were found to create adverse economic and social impacts and were, therefore, counterproductive. In the past the government attempted to allocate petroleum rather than rely on market forces during supply disruptions. Some of the consequences were energy shortages and lines for gasoline at service stations. We believe that the best way to ensure that petroleum is allocated where it is needed is to rely on the marketplace.

I would be less than candid if I did not admit that there are some who have doubts about the workability of this policy. It is a rare week that an article does not appear in some publication where an energy expert expresses concern about the Administration's energy program. As Secretary of Energy Donald Paul Hodel testified before the Senate Committee on Energy and Natural Resources:

I can assure you that the United States is fully prepared to respond to any energy emergency situation, and our level of preparedness today is better than at any time in the past decade.

Secretary Hodel went on to state:

In making this statement I do not mean to imply that our emergency preparedness program is perfect, nor am I suggesting that we are standing still on continuing improvements to the program. Nevertheless, I believe it is important to look toward ways

we can all work together to improve the President's market-based energy emergency preparedness program, rather than continuing to harken back to a program of mandatory price and allocation controls which created tremendous dislocations and economic losses during the time they were imposed.

We need to look forward positively to determine current ways of dealing with current concerns. I think all of us have a tendency to look back on the past with nostalgia. We look at modern day life, with its hectic pace, traffic congestion, drug abuse and crime, and long for the simpler life and slower pace of the nineteenth century. Yet, if we were to look more closely at what life was really like in the last century, we would have a completely different, and much more realistic, picture. For example, have you ever been caught in a traffic jam and wished that you were back in the days when there were no cars? Listen to what it was really like back then (1 pp. 3,20):

In city streets clogged with automobiles, the vision of a horse and buggy produces strong nostalgia. A century ago, it produced a different feeling--distress, owing to the horse for what he dropped [between 20 and 25 pounds of manure per day, per horse] and to the buggy for spreading it.

For those who chose public transportation, the experience could be less than pleasant in the 1880s (1).

The horse-drawn streetcar was a passenger's inferno and a pick-pocket's paradise. A precaution suggested by one traveler: 'Before boarding a car, prudent persons leave their purses and watches in the safe deposit company and carry bowie knives and derringers.'

In winter the streetcar became a rolling icebox, the stove on board more a symbol than a threat to the frigid temperatures. Like the horses up front, the stove was chronically underfed.

In summer the atmosphere was even more disagreeable. Fumes from unwashed bodies and beery breath thickened the ambient stench of tobacco juice to a porridge of nausea.

In much the same way, many seem to forget the experiences of the past and suggest that the federal government should be prepared to allocate fuel supplies once again should an emergency strike. It was Oscar Wilde who said, "Experience is the name everyone gives to their mistakes."

The United States had its experience with government controls and made its mistakes. We have learned what does not work and are now implementing programs and policies that do work. The result has been, as Secretary Hodel indicated, a nation better prepared to respond appropriately to a severe energy emergency.

What is the basis for my statement that our nation is prepared to deal with a severe energy emergency, should one occur? First, the extremely favorable world and domestic energy supply picture for all fuels should not be ignored. The current world energy supply outlook is strong. Excess productive capacity is present in coal and electric power generation, natural gas is plentiful, and oil prices are declining.

Of course, this does not mean that problems do not still exist, and that all objectives have been met. For example, the role of nuclear power in supplying energy is still controversial despite important initiatives in the areas of waste management and regulatory licensing reform. The role of synthetic fuels is also subject to dispute, particularly with respect to the need for and levels of federal funding. But simply because we have not yet achieved all our goals should not diminish the progress that has been made. Let us look at some statistics which show how far we have come from the days when the energy crisis was called the moral equivalent of war.

It is no secret that U.S. demand for oil fell again in 1982, the fourth year in a row, to 15.3 million barrels per day--about the level of demand in 1971. As a result of weather, recession, conservation, and other factors, this low demand continued into early 1983.

Lower demand, slightly increased production, and the net outflow from stocks led to the lowest requirement for imports in 1982 since 1971, which was a major factor in the downward pressure on world oil prices. As a result our dependence on imports has changed significantly, in both degree and location. Our net imports in 1982 were 4.2 million barrels per day. All references to imports here are to net imports--gross imports minus exports. The distinction between gross and net has become important because of the growth in exports in the past few years. Petroleum exports averaged 0.8 million barrels per day in 1982.

The new diversity in the sources for U.S. oil imports is a significant factor in our reduced vulnerability to future oil supply disruptions. For example, in 1977 the peak year for imports, 46 percent of U.S. petroleum needs were met from imports. The principal suppliers were Saudi Arabia, Nigeria, and Libya--all OPEC countries--and we depended on OPEC as a whole for 72 percent of our import needs (34 percent of our total oil requirements). By contrast in 1982 net imports provided less than 28 percent of U.S. petroleum consumption, and only half of these imports (14 percent of consumption) came from OPEC. The leading suppliers in 1982 were Mexico, Saudi Arabia, Nigeria, and the United Kingdom. Arab countries provided less than 6 percent of our oil while Mexico, the United Kingdom, and Canada provided about 10 percent. Including the imports for the SPR, Mexico is now this nation's leading oil supplier.

As a result of these developments, OPEC crude oil output has been operating at roughly 50 percent of capacity for a year or more, while non-OPEC sources have increased their share of world production, exceeding OPEC in actual output for the first time in 1982. OPEC produced an average of about 18.8 million barrels per day in 1982, or 3.8 million barrels per day less than in 1981. Non-OPEC free world crude oil production was 19.8 million barrels per day in 1982, or 900,000 barrels per day larger than in 1981. This has led to the decline in world oil prices from a high of more than \$42 per barrel on the spot market in 1980 to about \$27 per barrel on the spot market in 1983.

There are also indications that crude oil is being offered at prices of \$25 per barrel or less. With an estimated excess of production capacity of between 10 and 15 million barrels per day in the free world, the OPEC countries recently concluded another agreement seeking to maintain the reduced official price level of \$29 per barrel by imposing a production ceiling of 17.5 million barrels per day.

Another important factor in our reduced vulnerability is that excess refining capacity (currently

30 to 35 percent in the United States), together with upgrading of remaining facilities has given consuming nations much more flexibility in choosing types of crude oil. This trend, combined with excess capacity in world oil shipping, has created a much more flexible world market than the predominately fixed contract, limited-processing capability environment of the pre-1979 period.

With respect to stocks of oil, although inventories have been drawn down in recent years, with world levels declining some 500 million barrels from 1981 to 1982 to roughly 4.8 billion barrels, government strategic reserves increased to some 650 million barrels worldwide in this period. At the same time, consumption has fallen and inventories relative to consumption have remained at high levels. At the end of 1982, for example, world stocks represented some 105 days of forward-quarter consumption, compared with only 85 days in 1978.

Recently the Office of Energy Emergencies analyzed the primary inventories picture in the United States. If the SPR is not included, the analysis shows that primary inventories declined in absolute terms. However, looking at the relationship of stocks to demand, the days of supply available in January 1983 were virtually the same as in January 1981, and including the SPR volumes U.S. primary stocks were actually higher in 1983 than they were in 1981.

With more than 311 million barrels of crude oil now in storage in the SPR, the United States has substantial protection against an energy supply disruption. At the current level, the SPR contains enough oil for 74 days, based on 1982 average daily imports from all sources.

Natural resources policies implemented in the last 2 years are strengthening America by focusing on future energy and mineral needs and by providing increased environmental protection. U.S. Department of the Interior estimates show that 85 percent of the crude oil still to be discovered in America is likely to come from public lands--two-thirds of that to come from offshore drilling. Public lands also contain 40 percent of the natural gas, 35 percent of the coal, 85 percent of the oil shale, 90 percent of the tar sands, and more than 50 percent of the uranium that can be developed. As former Secretary of the Interior Watt has noted: "[T]he American people own sufficient raw energy resources to meet our needs for hundreds and hundreds, if not thousands, of years." Not only is the overall energy situation better today than it was 2 years ago, but the picture with respect to transportation is also considerably improved.

Between 1978 and 1982 U.S. gasoline consumption declined by almost 12 percent. Gasoline use in 1981 was 28 percent lower than it would have been if historical trends had continued beyond 1973. A number of factors caused that trend to change after the 1973-1974 Arab oil embargo, including increases in the price of gasoline, reduced speed limits, and developments in vehicle design and technology. Consumers have been stimulated to seek more efficient vehicles, to use alternative modes of transportation, and to reduce automobile travel. Automobile manufacturers have responded by offering more fuel-efficient models and by producing more small cars.

The Surface Transportation Assistance Act, signed by President Reagan on January 6, 1983, also bodes well for the nation's transportation systems. This Act provides for a 5-cent increase in the motor fuels tax, which began April 1, 1983. From a mass transit perspective, the most historic accomplishment of this new legislation is the creation of a mass transit account in the Highway Trust Fund. For the first time, mass transit will have its own dedi-

cated and reliable source of federal funding. One cent out of the new 5-cent gas tax will be dedicated to mass transit; beginning in FY 1984, the mass transit account will provide more than \$1 billion annually for capital projects.

In addition, the new block grant program will provide local officials with more control over their transit programs and more certainty concerning the funds available for transit use. This program turns considerable responsibility for transit over to state and local governments.

In addition to these funds for mass transit, the Surface Transportation Assistance Act will increase authorizations for the Interstate highway system and authorizations for highway safety and information. The Act will also establish a grant program to assist the states in developing programs of commercial motor vehicle safety and enforcement.

As I mentioned earlier, the overall energy picture now is quite good. Energy consumption has declined recently, to the point that petroleum demand in February 1983 (14.8 MB/D) was lower than any February since 1968.

The winter of 1983 was the second mildest winter in 52 years--saving residential and commercial heating consumers more than \$3.06 billion in fuel costs. Use of all fuels declined in winter 1983. For example, according to Energy Information Administration (EIA) data, electricity generation was down nearly 4 percent in the winter of 1983 from the winter of 1982, even though the number of houses heated with electricity increased each year. Natural gas consumption in winter 1983 was more than 1 tcf (10 percent) below 1982 and working gas in underground storage, which is normally injected in the summer to meet winter peak demand, was more than 500 billion cu ft (3 percent of the entire 1982 production) greater than 1982.

Although the warm weather and the slow economy surely affected energy consumption, it would be a mistake to assume that, with economic recovery under way, our energy consumption, particularly oil, will climb to levels of the past. Energy consumption per unit of gross national product (GNP) has declined more than 19 percent between 1973 and 1982, suggesting that basic changes have occurred in the way energy is consumed in the United States. The Christian Science Monitor reported accurately, I believe, in an article on March 29, 1983, that "Permanent gains built into the U.S. economic system will remain, no matter at what level oil prices stabilize." One significant indicator of this is the decline in average fuel consumption by passenger cars, from 763 gallons per car in 1973 to an estimated 540 to 546 gallons per car in 1982. This decline reflected increased fuel efficiency as well as reductions in miles traveled.

The Office of Energy Emergencies recently completed its review of the 1983 non-heating season and found no potential problems of any significance. With natural gas storage levels high, there will be no need for summer curtailments to fill storage, as has happened in past years. Coal stocks at electric utilities are high and are more than adequate should any labor disputes disrupt rail transportation. Electric generating capacity is available to meet expected peak demands, even at levels above those of last summer. Only with petroleum products is there the possibility of spot shortages--because of distribution and other logistics problems which are curable quickly if demand for gasoline or diesel fuel picks up quickly. But with the net cost of production and storage for refineries running several dollars in the minus column, it is unrealistic to expect suppliers to maintain large in-

ventories of petroleum products given present soft demand. Compared to demand, stocks of crude oil are higher than average, which should provide flexibility to produce additional products when needed.

EIA projects that for all of 1983, U.S. petroleum demand will rise only about 0.7 percent above 1982 levels. Given this energy supply and demand picture, what is the role of the federal government with respect to energy contingency planning?

Of the four major parts of the Administration's energy preparedness program, permitting the free market to operate is the most important. The other three parts are: availability of the Strategic Petroleum Reserve; appropriate programs, such as information dissemination and the Executive Manpower Reserve, to mitigate adverse impacts of severe energy supply disruptions; and U.S. participation in international energy emergency programs, such as the North Atlantic Treaty Organization (NATO) and the International Energy Agency (IEA).

Without the artificial restraints of government regulation of petroleum products, and without the misleading signals conveyed by price controls on oil, petroleum products are now moved freely to respond as needed to changing patterns of demand. This flexibility of market operation will be additionally improved when natural gas is deregulated. This important step in the President's energy program will continue to provide appropriate incentives for production and wise use of energy supplies.

Today the SPR contains more than 311 million barrels of crude oil and is currently being filled at a rate of 220,000 barrels per day. This volume is almost three times the amount that was in inventory 2 years ago.

In terms of mitigation of the adverse impacts of possible energy supply disruptions, a number of programs have been developed and are currently under development to deal with potential energy supply problems, before, during, and after emergency situations arise. Organizational structures, such as the DOE emergency response working group, have been developed and tested in simulated exercises and real world situations. In addition to ongoing public information and liaison activities, we have revitalized the National Defense Executive Reserve Programs and reappointed Reserve members. We have also developed initial plans for possible economic responses (such as increased block grants or reductions of withholding rates) to mitigate hardships during an energy emergency.

Let me describe some of these programs in more detail. We believe that information is the most important element in emergency preparedness. The Office of Energy Emergencies maintains an Energy Situation Reporting System, which combines a wide variety of information from government and non-government sources on all fuels and other topics that might affect energy availability, such as weather and transportation, and data from such sources as the American Automobile Association, Lundberg, and so forth. This report, which is for official use only, is circulated to a number of cabinet departments and to the White House.

Emergency communications have been augmented with state energy offices, and by May 1, 1983, we expect to have completed the addition of all of the states and the District of Columbia to our electronic mail system. Also on this system are a number of state and local government associations, and, included on a test basis, one county and the National Conference of State Legislatures. The system will be expanded in the future to include members of the National Defense Executive Reserves.

The electronic mail system is routinely used to send to the states various types of energy informa-

tion; for example it was used during the brief rail strike in 1982 and during the truckers' strike in 1983 to provide and receive relevant information about the energy impacts of those strikes.

We have also conducted a number of conferences and discussions with state and local governments, both directly and through organizations such as the National Governors Association and the National Association of Counties, to try to enhance emergency preparedness. For example, regular meetings are scheduled with the National Governors Association every 2 or 3 months to share the kinds of activities we are engaged in, the studies, the ideas, and to have them share their concerns and ideas with us.

Strengthening this relationship among all levels of government and the private sector is fundamental to the Administration's energy contingency planning. We have revitalized the three National Defense Executive Reserve units at the DOE (the Emergency Petroleum and Gas Executive Reserve, the Emergency Electric Power Executive Reserve, and the Emergency Solid Fuels Executive Reserve) and are now evaluating the possibility of establishing an advisory committee on energy emergency preparedness.

But I should remind you that our philosophy is that the free market works. Private citizens and state and local governments can and should deal with their own problems; federal involvement should be the exception. The federal government should not be a routine backstop; rather, it should only respond as a last resort to prevent serious national harm, such as loss of life or significant damage to property.

Just as a leg that has been in a cast for a time weakens and atrophies because it is not used, so citizens who come to rely on the federal government to solve every one of their problems lose the will and the ability to help themselves. It is clear that the federal government cannot help everyone. Therefore, we must create an atmosphere in which people are encouraged to help themselves. The Administration's energy preparedness program does just that.

I would like to conclude on a practical level and focus on the concrete steps we can take to mitigate the impacts of future energy emergencies. We in the Department of Energy do not expect an energy emergency, and we believe the Administration's energy program has already stimulated the types of production and conservation that will help prevent future emergencies. However, it is our responsibility and commitment that this nation be prepared to assist the workings of the marketplace as may be appropriate in any severe energy shortage.

I have no illusions that an energy emergency would be a pleasant affair for anybody. Really, when we discuss an energy shortage, we are discussing the bearing of shortfalls, and under no circumstances is that ever pleasant. I believe we have devised procedures, which I have outlined, that do the least harm to our economic and social fabric and prepare us best to deal with a shortfall. But I think we must recognize, as President Reagan said in his veto message on the Standby Petroleum Allocation Act of 1982, "that an interruption of a significant portion of foreign energy supplies, whether because of armed strife, human choice or natural disaster, will involve real costs to the United States and the world. Proper preparation beforehand, and free trade among our citizens afterward, can mitigate these costs, but no magic Federal plan can simply make them go away." People want to know how they can be assured of a supply of fuel in an emergency. As H.L. Mencken once said: "The public demands certainties."

By definition an emergency is a bad situation.

It will not be business as usual. There will not be sufficient fuel supplies for all the normal everyday activities. If there were, it would not be an emergency. We do not believe that it is the role of any level of government to try to ensure that nobody suffers at all during an energy crisis. Government should not prevent the private sector from responding appropriately to mitigate the adverse impacts of the situation, and should only become involved to mitigate the most severe difficulties.

State and local governments, businesses, industry, and consumers have a vested interest in energy emergency preparedness, and we must all work together.

What actions do I recommend to those persons who are concerned about potential energy emergencies? I would say that the most important step to take is to open lines of communication. State and local governments, private companies, and business groups should begin a dialogue to develop their own contingency plans. Get to know your local jobbers, identify sources of fuel, and begin to work out cooperative arrangements to help all concerned.

Another important step is to get to know the people in your city, county, and state energy offices. It will be invaluable for you to know beforehand whom to call for assistance should there be an energy emergency. By and large the federal government will respond primarily to matters referred from the state energy offices. The DOE has neither the mandatory authority to order fuel distribution nor any plans to obtain such mandatory authority. Therefore, it is especially important to combine your own self-reliance with getting to know those in your state energy and emergency preparedness offices who can provide more direct assistance in an emergency.

In summary the Administration's energy emergency

response planning reflects the importance of energy to the nation's health, welfare, and security. Our goal is to reduce the vulnerability of this nation to energy supply disruptions through primary reliance on the marketplace coupled with use of the SPR and other market-based responses to energy emergencies.

I fully support President Reagan's commitment to a market-based, energy emergency preparedness program. It can work, it will work, it must work. What will it require? It will require the citizens of the United States of America, from every section of the country, from every sector of our economy, from every area of political and economic thought, to participate in the cooperative and voluntary process of ensuring energy security. President Reagan cannot make the free market work; Donald Hodel cannot make the free market work; and all of the government employees at the DOE cannot make a free market operate as it should and can. Who can make this work? As Secretary Hodel has said:

Each and every one of us can make a contribution, if we are willing to take the responsibility upon ourselves, to act in our own self-interest rather than clinging to the hope that somehow our government can relieve us of all responsibility and shield us from the adverse impacts of oil supply disruptions. In the long run, all of us will be better off for having made this effort.

REFERENCE

1. O. Bettman. *The Good Ole Days--They Were Terrible*. Random House, New York, 1974.