

ENERGY CRISIS: SCARCITY AMID AFFLUENCE

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A few weeks ago I experienced that increasingly familiar phenomenon of the metropolis, the blackout. As usually happens, everyone present took it in good humor, but in this case for a special reason: the head of the local power company had just left the party a few minutes earlier.

If the problem were not so serious, anyone with training in economics might take some grim satisfaction in these events, the most tangible manifestation of the "energy crisis". They demonstrate that resources really are scarce, as the economics textbook always said they were.

The sudden awareness that there are not enough energy resources to support indefinitely the expected demands on them has come as a shock to a society only recently beginning to believe that we can accomplish anything we set our minds to. Not long ago, J. K. Galbraith persuaded many thoughtful and earnest people that we had truly solved the problem of production. As he put it:

To furnish a barren room is one thing. To continue to crowd in furniture until the foundation buckles is quite another. To have failed to solve the problem of producing goods would have been to continue man in his oldest and most grievous misfortune. But to fail to see that we have solved it and to fail to proceed thence to the next task, would be fully as tragic.*

*J.K. Galbraith, The Affluent Society, (Houghton Mifflin Co.; Boston, 1958) pp. 355-6

Accepting this as gospel, a number of influential individuals proceeded with great expectations to what they considered the next task -- the formation of social programs to reduce existing "social imbalances" (poverty, deficient nutrition, slum housing, etc.). More recently, as they became concerned over the shape of the environment, they have advocated placing additional demands on the economy with policies aimed at cleaning up the mess. All the while, more consumers continue to demand more cars, homes and appliances.

The tremendous expectations that grew from the seeds planted by Galbraith began to crumble with the growing realization that the hobgoblin scarcity was alive and well. Even in a society of unparalleled wealth, desires for more social action programs, higher-quality environment, and more consumer wares outstrip the economy's ability to meet them. As these conflicting demands compete for resources, some must go unfilled.

And with realization that resources are limited has come disillusionment. Many thoughtful people have turned away from the notion that growth, science and technology, operating within the framework of a market economy, offer the solution to our problems.

There is, I believe, an important lesson in all this. The lesson is, that the economy cannot be the ultimate problem solver in the sense that it can generate limitless consumer goods, social action programs, and improvement in the environment. Scarcity precludes that outcome. But it is a prime problem solver in the sense that it serves as an effective allocator of resources among conflicting demands.

The point of my remarks today is that by making the economy a better allocator we can help resolve many of our problems -- including the "energy crisis".

The Non-Growth Solution

The electric power industry realized its golden age of growth from the 1920's to the mid 1960's. The demand for electricity was small relative to the resources needed to meet it. At the beginning, people had few of the appliances that cooked their food and cooled their homes, not to mention those that brushed their teeth and popped their corn. As they installed more plug-ins, the power industry had little problem supplying the juice that drives them. Resources for generating electricity were plentiful and their exploitation involved only a small part of the environment. Clean air and fresh water were in large supply but the goods and services electricity made possible were not; so the latter received the higher relative value.

The first signs of trouble appeared in the late 1960's when blackouts and brownouts plagued several portions of the country during peak demands. America's appetite for power had surpassed the expectations of planners. New projections indicated that the country would be consuming more than three times as much electricity by 1990. The industry stepped up its attempt to boost long-range capacity.

But a change in values was also in the wind. Fresh air and clean water were no longer so abundant. A quality environment had become an economic good of rapidly rising value. Many of the fuels used in the past to generate electricity were deemed to be too dirty to be used in the future.

Power planners and others began to take a long, hard look at energy resources. "Cleaner" sources like natural gas and oil have dwindling reserves. Discoveries in Alaska have helped but are no match for expected future demands. Trillions of feet of natural gas and uncounted barrels of oil may lie beneath the United States or its waters, but these reserves are yet unproven. Moreover, to explore, develop and tap these sources could be an expensive proposition, requiring long lead times. Oil imports have and will continue to provide some relief, but three-fourths of world-wide petroleum reserves are in the Middle East and Africa, areas that are not always on the best of terms with the United States.

Technology offers new energy sources such as oil from shale and breeder reactors for nuclear power. It also offers new methods of cleaning up that abundant old standby, coal. But developing and implementing new technology takes time and it is the next 15-20 years that planners worry about most.

Officials in the power industry naturally talk about how to boost output to match the future demands of a growing economy. Some others, however, are crying out for a halt to economic growth, and electric utilities are prime targets for this non-growth cult. The power industry has come close to symbolizing the consumeristic society -- purveyors of superfluous goods and gadgets and visible sources of pollution. So it seems a simple solution to slow down economic growth and cut the output of gadgets. We could thus curtail the demand for electric power and the consequent drain on resources and pollution of water and air.

Slowing economic growth, however, seems to me neither a viable nor warranted solution to the "energy crisis". Economic growth is necessary to provide the

technological equipment, methods and national income to develop new and better sources of energy.

It is a costly and time-consuming business to develop the technology to tap energy resources and to make them environmentally clean. The problem is to match supply and demand for existing "clean" energy sources over the next few decades in such a way as to insure that we have the economic strength and technical know-how to tap new resource bases over the long haul. The non-growth approach cannot do this. We will need growth to generate the estimated \$500 billion to \$1 trillion in capital needed over the next few decades for developing and implementing new techniques, and for replacing existing facilities that are heavy polluters.

Old Tools for an Old Problem

Perhaps the most troublesome issue in the non-growth approach is the forsaking of science, technology and a proven device for dealing with scarcity -- our market-oriented economy. These seem to me the tools to use in solving the "energy crisis". Rather than discarding them we ought to look for ways to alter or repair them so that they can continue to build the structure we want.

In the past, the market system has served us well in resolving conflicts over scarce resources. The central force in this system, of course, is the market price. It directs the flow of resources into goods and services we value most and strikes the balance between supply and demand for the economy's output.

Balance is not being struck in the energy sector. Part of the reason for this is that one important set of prices is missing -- those on environmental products.

The environment in the past has been almost a costless place to dispose of the unwanted by-products of production and consumption. Consequently, it is over-used by everyone from the automobile owner to the utility executive. Without some way of incorporating environmental costs in the production process, the economy will continue to produce "too many" material goods at the expense of environmental quality.

So if we are to strike the balance between power consumption and a quality environment, we shall have to insure that people pay the price for using the skies and waterways as dumping grounds. This would raise the cost of producing energy from fuels particularly damaging to the environment. The power industry would be encouraged to seek less damaging fuels or to apply technology to clean up their production process.

In either case, consumers of electricity would pay higher rates. These rates would tend to slow the growth in demand for power.* They would also, for example, make it economical to put more insulation in homes and offices, thereby reducing energy demands for heating and air conditioning. The same kinds of pressures would be at work as have been observed for a long time in Europe where gasoline runs about a dollar a gallon. Because of this high price, cars are small and designed to economize on gas consumption. My point is not that we should have more insulation or smaller cars but that our market economy is capable of inducing these kinds of changes in demand.

* One estimate is that if the "real" price of electricity remains constant over the next 20 years, the demand for it will triple but if the "real" price increases by 50 percent, demand will increase by only 80 percent.

Moreover, business would be encouraged through changes in relative prices of energy sources to apply technological know-how to improve environmental quality. Higher prices on fossil fuels, for example, would not only speed the development of alternative sources of energy, but also speed the implementation of technology necessary to reduce the environmental impact of the use of fossil fuel.

In short, when environmental products are priced, utility executives will find it makes cents to alter their power production in such a way that both fuel resources and the environment are conserved. And as higher costs are passed on to consumers in the form of rate increases, a point will be reached where consumers find it makes cents to conserve on power consumption.

Role for Government

Incentives. Government has a major role to play in resolving the pricing aspects of the energy dilemma. One method it can use to put dollar signs on environmental costs is taxation. For example, the President has already recommended a tax on sulphur oxides emitted into the atmosphere. The tax would provide an economic incentive for polluters to cut back on the use of high-sulphur fuels. It would also provide incentive to develop and implement new methods of cleaning up high-sulphur fuels and to seek out low-pollutant substitutes.

Government could also build in some incentives on the consumption side. Required labelling of consumer appliances with respect to the amount of electricity or natural gas used in their operation might encourage consumers to seek out those brands that use less energy. Consumers could economize on utility bills and producers

of appliances would have an incentive to lower the energy consumption of their appliances. While this kind of incentive may seem like small potatoes now, it would grow in importance as higher rates for electricity peeled off more of the consumer's income.

Planning. Currently the United States is without an integrated energy policy. Energy responsibilities are divided among a number of agencies that can sometimes work at cross purposes. Nor is there a single agency devoted to tapping new energy sources. With energy sources becoming increasingly interchangeable and closer competitors with each other, a single department (as recommended by President Nixon) to coordinate policy seems to make good sense.

For example, the host of special incentives, quotas and pricing arrangements within each agency may be encouraging uneconomical use of our energy resources. A sole agency could coordinate energy production, allowing market force to play a larger role in allocating energy resources but taking corrective action when necessary for environmental reasons. In addition, a single agency could sponsor and direct technological research aimed at developing a long-term program that takes into account all aspects of the problem, such as balance of payments deficits because of oil and gas imports or national security considerations.

Equity. Who is going to pay for the rising cost of electricity? Everyone will in one way or another. We will pay with higher prices for products which are heavy users of electricity. Interest rates may rise as power companies dip into the capital market to expand and improve facilities. And we will pay directly in the

form of higher utility bills. Government action may be necessary to insure that the burden of higher prices is spread equitably.

For example, low-income families spend a larger portion of their income on electricity than higher-income families. Higher rates, thus, will hit them harder, just as a sales tax on other necessities does. To lessen this burden on the poor, government could alter the rate structure so that those who consume relatively small amounts of electricity pay a lower rate than those who consume larger amounts. This could mean that large industrial users would have to pay higher rates as opposed to the declining block rates that many now pay.

Crisis?

A real danger -- and perhaps the real "crisis" -- in the energy issue is that there will be a turning away from the economy in seeking solutions. Many will be tempted to do this as they confront continuing environmental problems, social disparities and the shattering reality that the economy cannot, after all, give us everything we might like to have. The energy problem confronting us is essentially an economic problem and the market economy is a reliable tool for solving it. The non-growth route is not. If we improve the operation of the economy rather than forsake it, we can speed technological development, stretch energy resources, and lead to a cleaner environment, all within the context of growth.

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