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The Energy Crisis: A Few Perspectives

Alfred C. Aman, Jr.

Editor's note: This is a summary of remarks by Professor Aman at a Friday afternoon faculty-student forum at the law school, sponsored by the Law, Religion, and Ethics Committee.

The phrase energy crisis has become commonplace over the past few years, but it is actually used in various contexts and conveys a variety of meanings in each context. Before discussing some of these meanings, let's examine the words themselves.

We all know what energy means. It's the capacity to do work. It can be kinetic or potential. Einstein said it equals $MC^2$.

Energy can be generated in various ways. Indeed, the history of the human race is, in a sense, that of determined efforts to develop more ingenious methods of harnessing the natural energy all about us—in part, at least, a continuing struggle to free humankind from the pain and agony of an earlier age when humans themselves were the foremost raw material. Through the ages the most available source of energy we have relied on is muscle power—human and animal. This source built the pyramids, the Appian Way, ancient city walls, and magnificent castles. With the invention of the wheel and the fulcrum we became capable of doing far more, but this, too, was with muscle power. It was not until the appearance of the waterwheel and the windmill (perhaps around the eleventh century) that we began to supplement muscle power with other sources of energy.

Our use of fossil fuels—natural gas and oil, in particular—is quite recent. Oil was discovered about 120 years ago, in 1859, and it took us some fifty to sixty years to discover how best to use the natural gas often found with oil. And, of course, experimentation with other energy sources such as nuclear power and solar and geothermal energy is even more recent.

All these sources of energy are what might be called earth-centered. Some people suggest that we limit ourselves by failing to consider outer-space energy sources. A space-bound perspective assumes "a vigorous effort in extraterrestrial activities early in the 21st century, including the eventual establishment of large autonomous colonies in space involved in the processing of raw materials, the production of energy and the manufacture of durable goods—both for indigenous consumption and as exports back to earth or to other solar-system colonies."

In any event, whether our perspective is earth-centered or space-bound, we have a clear idea of what we mean by energy. The word crisis, however, is more intriguing. Though it is often taken to connote something foreboding or disastrous, its actual meaning leaves room for optimism. Literally it is a turning point, a time when decisive change is likely to occur, for better or for worse. A medical crisis is the moment in the course of a serious disease that will leave the patient either improved or dying. A marital crisis implies the dual possibility of renewed love or divorce. Similarly, the energy crisis is not only a danger point, but also an opportunity for decisive, constructive change—a chance for recovery.
As in medicine and in marriage, looking on the bright side of the energy crisis is futile unless we can diagnose the problem accurately and prescribe a sound course of therapy. Unfortunately, energy crisis means different things to different people precisely because there is no agreement on what the underlying problem is. Furthermore, what the treatment should be and even what constitutes recovery are still open questions.

Some analysts argue that the energy crisis is one of shortage, particularly of natural gas and oil. We simply are running out of these fossil fuels. The earth's supply is finite. That our supplies are declining and our resources dwindling is beginning to show. The long lines at gasoline stations, the nationwide imposition of fifty-five-MPH speed limits, the disruption of our economy in the winter of 1977, and, perhaps most importantly of all, the 1973 Arab oil boycott that resulted, in effect, in a dangerous declaration of United States dependence are telltale signs that we are about to enter a new era, an era of energy scarcity. Our day-to-day conveniences are in jeopardy. So, too, our national security and the long-term growth potential of our economy.

Without discounting the adverse impact of shortages, other analysts argue that they are but a symptom of the true problem; they are the result of artificially low prices brought about by counterproductive government regulation. The prices consumers have paid for energy have not reflected the true cost of the resources consumed nor have they provided adequate incentives to energy producers. One economist has noted that "had real energy prices remained constant over the years we would have experienced gradual rises in ... the nominal prices of gasoline, heating oil and electricity and consumers would not have been induced by low prices to drive bigger cars, waste heating oil in uninsulated homes, and purchase inefficient electric appliances. Energy consumption today would be significantly lower in the home and in industry."

Advocates of this analysis thus see the energy crisis as an opportunity to abolish destructive government regulation. In an unregulated market, consumers would be given accurate pricing signals, and producers would have incentives to take the risks and bear the added costs necessary to find new supplies. A free-market approach would thus have the effect of increasing supplies and, over time, eliminating the price-related shortages we now face.

Implicit in the free-market approach is the notion that consumers may continue to use energy as they please; that is, for anything they can afford. Higher prices would be likely to curtail frivolous demand. We would be less willing to incur extra costs by wasting energy in poorly insulated homes or in highly inefficient appliances, but if we wanted to keep our dishwashers, our air conditioners, our hair dryers, our snow blowers, and even our gas-guzzling autos, we could do so, provided we were willing and able to pay what they truly cost society to run. Those not willing to pay would make their own decision on how to use the energy available to them. Those unable to pay, however, would have little choice in the matter, but various programs such as energy stamps or other forms of subsidies could be implemented to help meet the needs of low-income consumers.

The fundamental economic rationale for deregulation is based primarily on the nature of the energy industry involved rather than the likelihood of increasing energy supplies. In fact, advocates of deregulation imply that we can have all the energy we want, albeit at a price. Some recent reports would have us believe that reservoirs of fossil fuel in the earth are small and dwindling, but free-market advocates are quick to point out that estimates of these resources are usually based on present technology and present prices. Indeed, if the price is allowed to rise, there's no telling what energy producers might find. The Wall Street Journal predicted not too long ago that, at least with respect to natural gas reserves, "if prices were only decontrolled—we have roughly 20,000 trillion cubic feet of natural gas at hand, with some estimates that there may be 50,000 trillion cubic feet of it. That is, enough to last between 1,000 and 2,500 years at current consumption."4

Others, however, take a far more pessimistic view. The Carter energy plan is premised on the fact that "the days of abundance are now drawing to a close and American society faces sobering new energy realities. Domestic reserves of oil and natural gas, the nation's predominant energy sources since World War II, have been declining since 1970. ... Fundamental changes in the supply and cost of oil and gas will reshape the United States during the remainder of this century."5 Starting from this premise, the primary therapy the Carter administration prescribes is conservation. This does not necessarily preclude price deregulation or higher prices, but little hope is held out for finding reserves of the size the Wall Street Journal predicts. The primary goal is to make what little resources we have left last as long as possible, thereby providing the time necessary to adjust to a new way of life or to develop new energy supplies and technology.

The conservation advocates argue that for too long we have indulged ourselves as if our resources were inexhaustible. As some critics have put it: "Living in the most
affluent society in history, Americans took large amounts of the resources of the globe and became the best clothed, housed, fed, transported, and entertained people in the world. It was, however, never enough. The American people were insatiable. They demanded more of everything, taller buildings, extravagant space programs, more powerful, luxurious autos; weed-free lawns; second houses; boats—everything. And this spiral still didn’t bring contentment."

Though artificially low prices may have paved the way for such excesses, the implication of such criticism is that the real culprit is ourselves—the way we have chosen to use available energy; that is, the way we have decided to live. The energy crisis thus presents a different kind of opportunity: neither to despair nor necessarily to deregulate but to examine our way of life and perhaps to change it substantially.

Given a dwindling supply of natural resources, particularly fossil fuels such as gas and oil, do we have the right to exhaust these resources ourselves? Don’t future generations have a right to some of the earth’s remaining resources? The economist Kenneth Boulding during a recent visit to Cornell responded to such a question with a quotation from Marx: “Why should I worry about posterity? What has posterity ever done for us?” (That was Groucho Marx, not Karl, as Mr. Boulding reminded us.) Others contend that undeveloped fuel, that is, fuel in the ground, is no legacy. Passing on capital to future generations is far more valuable than passing on undeveloped raw materials, since “all other things being equal, capital ... embodies not only energy but materials and labor and technology.”

But by continuing to use our resources at present and possibly even increased rates, we are making decisions not only for future generations of Americans but also for today’s generation in the rest of the world. The United States has roughly one-sixteenth of the world’s population within its boundaries, yet it accounts for approximately one-third of the world’s energy consumption. What are the consequences to the global community of continuing to appropriate a disproportionate share of the world’s resources to our own use? If we do not continue, many argue that profound worldwide economic consequences will result. But others predict dire consequences for the energy-consuming countries of the Third World if our pattern continues. One observer writes, “As prices soar and the large consuming nations scramble for available supplies, the smaller nations without indigenous energy resources are finding it increasingly difficult to develop modern economies and improve the lives of their people.”

Surely, it is suggested, there comes a point when the rich cannot continue to get richer while underdeveloped nations are denied an opportunity to fulfill their aspirations for a higher standard of living. Thus cutting down on our oil imports not only may be wise from a balance of payments and a national security point of view but may have the added advantage of providing greater opportunity for Third World countries to fulfill their own economic growth potential.

But if we turn inward and not only conserve but try to increase our domestic supplies as well, serious environmental concerns arise. Consider, for example, the problems inherent in the decision to switch to coal, one of our dirtiest fuels. Coal is more abundant than natural gas and oil, and it may solve our fossil fuel supply problem, but not without adding ecological and health problems, in the form of air pollution, strip-mining, black lung, and miner safety. Nuclear power entails even more serious risks. Not only is there a problem of radioactive waste disposal, there
are the broader problems of nuclear proliferation and terrorism as well. These are costs that are difficult to quantify, and even more difficult to pay. Therefore, until we can develop new forms of cheaper, less environmentally destructive energy, we must cut back our energy demand.

In fact, I do not think that the development of such forms of energy is as unlikely or as distant as it may now seem. Historically, our greatest resource has been our own resourcefulness. Surely the solutions to the problems of air pollution, strip-mining, miner safety and health, and perhaps even nuclear safety, are not beyond us forever. At least with respect to the problems raised by increased coal production, moderate advances in pollution control can be expected, as well as the incorporation of environmental values into decisions of where and how to open new coal fields. And, indeed, consider new sources of energy such as thermonuclear fusion or solar power. Both offer the possibility of a limitless supply of energy from a universally available fuel—heavy hydrogen or a bucket of seawater in the case of fusion and the sun in the case of solar power. Solar energy is created by a process harmless to the environment, and the by-products of fusion are perhaps less likely to be convertible into dangerous weapons than the by-products of nuclear fission.

I do not mean to minimize the difficulty of scientific and technological breakthroughs, nor the risks they may entail. Rather, I suggest that the possibility of these solutions raises even more difficult questions. Questions concerning our lifestyle have often been raised in the face of energy shortages. How will our lifestyle have to change if we no longer have enough energy to carry on as we have? The implications are that such questions are not as important if there is no shortage, or that changes in lifestyle will occur only if they are forced on us.

But how we choose to structure our lives and the values we espouse are individual matters that are as much unrelated to the energy crisis. Perhaps it is a tribute to our economic and technological abilities to have certain temptations open to us, such as the temptation of materialism or the temptation of escapist technology that allows us to overrely on machines, not simply to free us from time-consuming labor but to provide pleasure and perhaps act as a substitute for thought. Our apparent preference for television over books may be one example of this. And there is the temptation toward minimal contact with our neighbor, the inclination to limit the situations in which we share our space and our time with other members of the community. Perhaps our preference for the one-person-automobile mode of transportation as opposed to carpooling or mass transit is illustrative.

The point is that how we use energy is not determined solely by its price and availability. Focusing on the crisis in energy pricing or energy supplies perhaps obscures the real crisis—a crisis in our values and in the system of priorities that results from them. Even in a land of plenty, where energy supply would be abundant and the real price of energy would be low, a decision to use energy should be based on more important values, such as the values of simplicity and self-reliance coupled with a spirit of generosity and a sense of community, both local and global. Our use of energy affects more than just our energy supplies.

If there are to be long-term changes in lifestyle, it need not be solely because we are more effectively constrained by the price of energy or shortages in energy supplies. Indeed, we would not be liberated from the energy crisis, in the broader sense that I have described, even if this were the land of plenty. Nevertheless, this broader energy crisis does present an opportunity, an opportunity that lies within ourselves.

Mr. Aman teaches administrative law, remedies, and energy regulation.