Letters

The entire 19 April issue of Science *was devoted to energy. Extra copies were printed and more than 14,000 have been ordered by colleges and universities, government agencies, environmental action groups, industrial and engineering firms, and oil, chemical, and power companies. Here is a selection of the many comments we have received.*

Energy-Induced Inflation

Science has demonstrated excellent awareness of the situation developing in the energy economy by its special issue of 19 April. One aspect that was not specifically analyzed is the effect of the rising costs of basic energy supplies on inflation. The steadily decreasing value of the dollar is assuming greater and greater national importance, and currency stabilization is now the subject of one frenzied idea after another on the part of the Administration.

Over the years, and on the basis of cheap energy, we have developed an economy wherein energy is a necessary ingredient in essentially every product and service. As the cost of these energy inputs becomes greater, the energy demand decreases only slightly because there are no alternative methods which can be readily substituted. The inelasticity of the energy demand with its increasing cost is further assured by the tremendous capital investment in equipment inherent in the means for using energy to provide the desired goods and services.

Recently we have seen the average price per barrel of imported oil increase to four times that of a year ago. Imported oil is now providing approximately 20 percent of our total energy requirements, and that fraction is increasing. This factor alone has accounted for an increase in the total cost of our primary energy supplies during the past year of more than 50 percent. Similar but smaller fractional increases in the costs of domestically produced oil, gas, coal, and even uranium are having additional effects in forcing upward the total cost of fuels used in the United States.

At the present time the cost of all raw fuels available at the mine, wellhead, or port of entry is equivalent to 5 percent of the gross national product. A doubling in the total cost of these raw energy supplies can be expected to produce an inflationary effect of an equivalent percentage. While this is obviously an appreciable factor in today's inflation, the effects are likely to be even more serious in the future.

We are caught for the first time in a situation where the limitations of earth resources are inevitably forcing a decrease in the purchasing power of the dollar.

W. E. Parkins

Atomics International,
P.O. Box 309,
Canoga Park, California 91304

The Promises of Technology

The energy issue (19 Apr.) and the recent spate of other writings on this subject suggest to me several fundamental questions that need to be asked. Let us assume that the pressures caused by our demands for increased energy sources will result in the technological development of significant new forms of energy production, for example, from nuclear fusion or direct solar conversion. What then? Will the energy demands of the world be met? Or will the exponential growth of energy use merely be further kindled and soon obliterate any new gain? And, what happens to our other natural resources and ourselves when energy supplies are vastly increased? Won't the pressures on our ecosystems be magnified and our resources be utilized even faster than before? Hasn't this always accompanied the introduction of new energy forms? It seems that the success of our modern technology is dependent on ever more rapacious use of raw materials. At the same time, the benefits to humanity have been mixed. For example, does it make sense to indulge ourselves with endless gadgetry designed to save human labor much to the frustration of our minds and the detriment of our physical well-being? What is the real price of this tradeoff of costly resources for the sake of man's leisure?

On the other hand, with new and highly productive, low-cost energy sources and with planning, could we actually afford to obliterate less of nature, preserve more of man's natural domain, and make his habitations more livable? Might recycling become more economical, resulting in less exploitation of raw materials? To make this happen, it seems to me, would require ingenious efforts, both to reduce excessive use of resources and to become more efficient in using what we must. It would take quite different commitments from those of most present societies. Change to more simple lifestyles would likely be necessary, resulting, ironically, in a real improvement in the human living condition, as opposed to the present drive to ever "higher" but at the same time more "mechanical" living standards. Without direction, great strides forward on the energy supply scene may only hasten our pace of material consumption and human deference to mechanical living, resulting in exhaustion of natural resources, further environmental degradation, and, finally, the virtual dehumanization of man. Must the promises of technology be so shortlived and of such mixed blessing? Can, or should, a free society give no positive guidance to its own destiny? Must a society be so preoccupied with present crises as to ignore its future? Is the decivilization of modern man irreversible?

Keith Roe

Life Sciences Library,
Pennsylvania State University,
University Park 16802

Solar Power

In his article "Low-cost, abundant energy: Paradise lost?" (19 Apr., p. 247) Hans H. Landsberg makes the following assertion:

> For good reason, solar energy has drawn increasing attention. At least on a global basis, its use would essentially free us of the thermal discharge penalty. It would thus get around atmospheric and climate problems and obviate limitations of energy use as an ultimate "limit to growth."