directly or indirectly to a growing sophistication in the use of electricity. The fields of these advances have ranged from medical exploration to space exploration and have affected our communications, our transportation, our education, and almost every aspect of our daily lives that we can think of. If we tie this to the needs of our increasing population and the energy needs of our growing industry, it is little wonder that in the United States our demand for electricity has been doubling every ten years.

Historically speaking, nuclear power as a source of electricity has come on the scene just in time. This is true for more reasons than just its ability to supplement our limited fossil fuels at a time of growing demand for electricity. Nuclear power has surged forward remarkably in the past few years because it is now realized that, in addition to being reliable, safe sources of power, large nuclear reactors can provide increasing amounts of electricity at economic costs and can do so cleanly, without adding to the burden of air pollution. In fact, as I will point out in a moment, nuclear power could play a significant role in helping us reduce many forms of environmental pollution.

First let us look at nuclear power from the standpoint of economic benefits, particularly in terms of how the decreasing energy costs that future reactors might bring about could affect various aspects of our lives. To begin with, we must understand that most of the reactors in operation today are of relatively small sizes. Those now under construction and on order are considerably larger, and these are the plants that appear to be economically competitive with other sources of power. The even larger nuclear plants conceived for the future will show increasingly greater economy. But size is only part of the story. The technology of today's light-water-moderated reactors allows these plants to use less than 1% of the energy locked in the uranium found in nature. The nuclear plants of the future, making use of the "breeder" reactor technology now under development, will be able to use upwards of 50% of our natural nuclear fuel resources by converting the non-fissionable isotopes of this fuel to fissionable isotopes at the same time that they are producing power. The net effect of this is to multiply manyfold the amount of energy we can extract from the world's large supply of uranium and thorium. Such reactors will not only breed new fuel but also will proliferate the uses for their power as the cost of this power drops.

In a talk before the International Atomic Energy Agency last September, Dr. Alvin Weinberg, Director of AEC's Oak Ridge National Labora-