

Coming Events Cast Shadows Before Them

With prices down at the gas pumps, few Americans worry much about energy supplies. Conservation efforts have paid off and our energy bills reflect savings. So why worry?

While most of us go blithely about our business, the people who keep track of energy supplies do worry. They know that eventually the earth's supply of oil and gas will be exhausted. Even before that time comes, alternate energy sources must be found to take up the slack because recovering fossil fuels will no longer be economically feasible.

Oil and gas now supply 60% of global energy. Production is expected to decline early in the 21st century, whether or not new sources of recoverable oil and gas are discovered because production costs will be too high for world markets to support.

In 1982, Richard Nehring of the RAND Corporation published an estimate of a total of 1,600 to 2,000 billion barrels of oil ever to be recovered. A 1983 study by the US Geological Survey not only confirms Nehring's estimate but comes in with a lower figure of ultimate recoverable resources: 1,700 billion barrels. An enormous quantity? Certainly. But consider: 500 billion barrels have already been procured. And assuming a constant consumption rate of approximately 20 billion barrels a year (1983's global rate of oil use was 19 billion barrels; 1979's was 24 billion), peak production will come in about 25 years.

Can coal...US coal reserves alone are 10 times the size of known global oil and gas supplies...substitute? With present technology and in today's dollars, replacing a million barrels of oil production a day with synthetic oil from coal requires 20 huge plants and capital investment of more than \$100 billion. To build enough plants to compensate for dwindling oil and gas production will put unprecedented strains on global capital even if we start construction today.

Of major concern, too, is global environment. Two-thirds of the free world's coal is found in the United States; a massive

effort to convert from oil and gas to synfuels would require enormous increases in US coal production. Acceleration of carbon-dioxide emissions from both production of synfuels and burning them would put the global climate at risk. On the other hand, the consequences of lower production of oil have been graphically illustrated in the last decade or two as posing other serious threats. Prices rise rapidly. Economic development stalls. Political and military tensions increase. Inter-nation conflicts intensify.

To assure future peace and prosperity, energy sources independent of fossil fuels must be developed before oil and gas production peaks. Obvious candidates are the biofuels which recycle used carbon (alcohol, methane, wood, trash, etc.) and electricity generated by hydro dams (which already produce 14% of our current needs), by wind turbines (which are becoming increasingly reliable given modern technological improvements), and by photovoltaics (the most promising option for solar electricity production). Nuclear plants (if safety and waste disposal problems are ever solved) could make an important contribution, too.

In addition to direct applications, electricity would be used to produce hydrogen fuel (stored as a liquefied gas or in metal hydrides) from water. Four-fifths of our planet's surface is covered with water. The technical feasibility of developing hydrogen as fuel has long been established. As in other options, cost is the stumbling block. No one wants to invest billions of dollars to construct hydrogen plants while Middle East oil is available for only a few dollars a barrel.

But now, while fossil fuel supplies are still ample, clearly foreseeable major disruptions can be prevented by preparing for the inevitable future. America could set the example. America could lead an international movement for renewable energy production. America could set the stage for a peaceful and productive 21st century.

Doesn't it make more sense than STAR WARS?