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## Energy and National Security

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### Is "Energy Security" A Meaningful Concept?

Phil Sharp, long-time chairman of the House Energy Subcommittee, vigorously argued that the best energy security policy is to have lots of people producing and lots of people distributing the energy that the United States needs. This minimizes the risk of a disruption at any one point in the production/distribution chain. In this context, he said that the one enduring energy security question that requires diplomacy, military presence, and the willingness to use force is the concentration of oil reserves, production, and surge capacity in the Middle East.

Backing up Sharp, long-time Amoco vice-president John Lyman argued that U.S. energy security is best maintained by ensuring that the United States is, and is perceived to be, fully supportive of free trade and of the use of market forces on a global scale.

Vito Stagliano of Resources for the Future argued that energy security is an empty concept used to perpetuate bad, self-serving public policy. He recounted the history of dramatizing energy issues and using energy as a reason for dubious public policy, in which category he included expenditures in excess of \$100 billion between 1973 and 1992. The most important contribution to U.S. energy security during that period came not from any of the projects financed by this spending but instead by the de facto death of OPEC. The death of OPEC, he argued, came from the 1981 U.S. government decision to end price controls and reduce regulations on energy output. The 1981 actions spurred the growth of spot and futures markets that disrupted the ability of any government, including those of the OPEC countries, to control oil prices.

John Riggs, Principal Deputy Assistant Secretary of the Department of Energy, replied that energy security reminded him of Mark Twain's comment, "The music of Wagner is better than it sounds." That is, while the 1973 and 1980 oil shocks led to some inflated rhetoric and while energy security has been used as a justification for some pork barrel projects, the fact is that the oil shocks did inflict significant economic harm on the United States. True, much (although certainly not all) of this harm arose because of the imposition of price controls, but that should not be used to minimize the effect that the oil shocks had on the economy and therefore the potential effects that a future shock could have.

Mr. Riggs also argued that dependence on energy imports can reduce U.S. foreign policy options. As an example, he asked if the United States would have opted to bomb Libya in 1986 had world oil markets been tight? He suggested that the United States might not have taken such a strong stance against Libyan terrorism had the United States been concerned it could provoke another oil price shock.

## **Supply Disruptions**

The participants agreed that the world oil supply system has changed since the oil crises of the 1970s and 1980s. The system now has much greater flexibility, thanks to a much larger role for market forces. On the other hand, Mr. Riggs cautioned against exaggerating the role of market forces. Since Saudi Arabia can produce oil at two to three dollars per barrel and the world price is seventeen to eighteen dollars, something other than market forces seems to be at work.

After noting that regulations and price controls that encumbered oil markets in the past have now been largely eliminated, Hill Huntington of Stanford University's Energy Modelling Forum asked, how well and how quickly would markets work to adjust to a supply shock, and if they did not work quickly enough, would politicians step in with price controls or other such measures. He argued that macroeconomic models show that a doubling of oil prices would cut U.S. GDP by about 5 percent after a period of one and a half years. He argued that in the face of such a considerable price, the U.S. government was likely to adopt offsetting policies.

There was general support for the idea of buffer stocks to dampen the impact of a sudden supply disruption. However, others pointed out that now that energy is allocated more by market mechanisms, a supply disruption was likely to be felt as a price spike, and that there would always be a strong lobby that argued that such a price spike was the market's way of forcing the economy to adjust to a supply disruption. In other words, the devotees of the free market would oppose use of a buffer stock in the event of a supply disruption, as seen in the wake of the Iraqi invasion of Kuwait when there was strong opposition to use of the SPR.

That led some speakers to argue that the SPR may not be worth the investment because it is unlikely to be actually used, while others argued that the SPR should be used to dampen price spikes. Whatever the arguments for or against the SPR, Sharp warned that the firm political reality was that Congress was unwilling to approve, and the voters were unwilling to support, any increase in taxation on energy no matter how minor to fund the SPR.

When the discussion turned to the question of what might cause a supply disruption sufficiently large to disturb the U.S. economy, the general sense was that the disruption would have to be very large (one speaker spoke about 3 million barrels per day for many months) and that the only realistic scenario is political turmoil in the Persian Gulf.

### **Tautness of World Oil Markets**

The participants differed considerably in their evaluation of whether world oil markets are likely to become more taut or to remain slack, with ample unused production capacity. Guy Caruso, the director for non-member countries (i.e., OPEC) of the International Energy Agency, reviewed the IEA's forecast that world oil demand will grow each year in the 1990s by about one million barrels per day, despite environmental policies and technological improvements that will shift the fuel mix away from oil. The IEA forecasts that the increased oil demand will be met overwhelmingly by OPEC oil, as production in the industrial nations declines. At the same time, international trade in energy will diversify as more natural gas and electricity is exported.

The major issue about energy demand considered at the conference was how rapidly will oil demand increase in the fast-growing East Asian economies? Milton Russell argued that Chinese energy demand would rise sharply, but that most of that demand would be met by domestically produced coal, with some role for hydro- and nuclear power. He presented evidence for his thesis that China was going to remain dependent on coal, which in 1992 provided 74 percent of China's primary energy production. The increasing energy demand would be primarily for electricity, easily produced by coal, and for transport, in which China is heavily reliant on coal-fired or electric railroads (which indeed make good sense under Chinese conditions). He summed up by saying that China would remain a bit player on international energy markets. Indeed, he was much more concerned about the environmental impact of the massive greenhouse gas emissions China will be producing.

Fereidoun Fesharaki, director of the resources program at the East-West Center, took a different tack towards East Asia's energy future. He explained that the region's energy demand is rising quickly due to economic growth, and that oil is a particularly cheap way to satisfy that demand. That means rising oil energy imports, especially from the Middle East. Today, about 36 percent of the region's oil comes from the Persian Gulf; in 2000, about 60 percent will. That will produce a significantly altered landscape in terms of trade relationships.

With regard to U.S. energy demand, Gary Moore of the Department of Energy's Office for Conservation and Renewables argued that energy efficiency is an often underemphasized part of the energy equation. Much of the apparent gain in U.S. energy efficiency since 1973 has come from a shift away from manufacturing and especially energy-intensive industry, which suggests that there is still ample room for future gains.

Turning to oil supply conditions, Vladimir Likhachev, deputy director of the Russian Academy of

Sciences Energy Research Institute, argued that Russia is not likely to return to its 1990 oil output until 2010, with production continuing to fall until at least 1997 if not 2000.

On the other hand, Eliyahu Kanovksy of Bar Ilan and Yeshiva Universities, argued that the difficult economic circumstances in which Saudi Arabia finds itself would lead that country to seek to increase its oil output as much as it can, in light of market conditions. But the same economic difficulties that create the strong need for revenue could also contribute to political turmoil that could, in an extreme case, lead to supply disruptions.

### **Nuclear Power as a National Security Issue**

Robert Eynon of the Department of Energy's Energy Information Administration presented a detailed analysis of why nuclear power would be a part of the United States and world energy mix for the foreseeable future. In the United States, much of the growth in electricity demand through 2000 would be met without building baseload plants, e.g., from renovating existing plants and from non-utility power producers. And even after 2000, the bulk of the new plants built would be fired by hydrocarbons, with natural gas increasing its share and coal remaining the main fuel. So the nuclear share in electricity output would decline from its present 20 percent, but not disappear. Worldwide, the aggressive nuclear programs in Asia and France would offset retirement of nuclear plants elsewhere in Western Europe. Global nuclear power capacity is forecast to grow from 330 gigawatts now to 340 gigawatts in 2010.

Thomas Cochran of the Natural Resources Defense Council discussed the proliferation concerns that nuclear power presents. The unanimous opinion of the arms control and weapons design communities is that the main constraint on a country's ability to produce nuclear weapons is the availability of fissile material, that is, plutonium or highly enriched uranium. Plutonium is a by-product of nuclear power production. Four countries the United Kingdom, France, Russia, and Japan have made heavy commitments to recycling and reprocessing plutonium from nuclear power reactors, to reuse as reactor fuel. Unfortunately, even a small amount of plutonium from a civilian reactor is sufficient to make a nuclear weapon. The existing international control regime over nuclear material is not adequate to monitor plutonium flows, much less to prevent diversion to weapons use. Cochran argued for an international agreement to forego production, separation, and isotopic enrichment of weapons-usable nuclear material.

### **Implications for the U.S. Military**

There is broad consensus that the United States must maintain a military readiness to defend oil supplies if needed. The need for a military component to energy security is made more manifest by the concentration of oil resources in the politically volatile Persian Gulf. The market forces which the U.S. government is encouraging should make the United States and world economy more dependent of Persian Gulf oil, which is the cheapest source of energy available. That concentration of energy production in one area makes the world economy more vulnerable to supply disruptions, including by a dictator eager to create a temporary shortage that drives up prices or encourages others to turn a blind eye

to his aggressive plans.

An energy issue of great importance from a security point of view is the extent to which China would become a large-scale oil importer. No consensus on this issue was evident at the conference. To the extent that China comes to rely on Persian Gulf oil, Beijing might feel more of a need to develop a blue-sea navy capable of defending its sea lanes of communication, and China might become interested in a broad alliance (including security as well as energy) with some of the oil-rich states not friendly to the United States.

Most of the issues about energy security concern economic policy. Economists, by their professional orientation, prefer to use markets to provide a regular supply at an economically appropriate price. The increasing reliance on market forces for oil has served United States interests well by undermining OPEC's ability to keep oil prices high. Given the established track record of success that comes from relying on the markets, the U.S. government is likely to use markets as the foundation of U.S. energy security policy.

But in the event of a large supply disruption, markets might not work quickly enough and well enough to satisfy the U.S. public. Economists may argue that buffer funds are the best insurance against large disruptions, but the experience of the last decade is that the U.S. public is not prepared to pay higher gas taxes to fund buffer stocks.

## **Recommendations**

- The U.S. government needs to pay close attention to long-term prospects for Chinese oil imports.
- The United States needs to have a robust capability to defend Persian Gulf oil from any threat.
- Clearer agreement is needed on when and how to use the Strategic Petroleum Reserve.

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