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Energy Security

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Energy security is a challenging topic, because it is not clear what the term includes and what it does not. I want to review some salient energy security issues and then reflect briefly on the utility of the concept of energy security.

Proliferation. One energy technology – nuclear power – presents a unique security issue, namely the possible misuse of the commercial fuel cycle, especially enrichment and reprocessing, to acquire weapons usable material. Clearly, the possibility that a country or sub-national group could obtain weapons usable material from the commercial nuclear fuel cycle has the highest national security implication. In recent years several proposals have been put forward – one by Arnold Kanter, Ernie Moniz, Dan Poneman, and myself – for mechanisms that will reduce proliferation risk from the fuel cycle, if commercial use of nuclear power expands, by insulating enrichment and reprocessing from the operation of power reactors. I shall not address the very important topic further here today.

Energy infrastructure protection The 9-11 attacks have caused governments and the public to recognize the special vulnerability of any energy infrastructure – power plants, the electric grid, reactors, power

plants, and pipelines – to terrorist attack. It is certain that protection of the energy infrastructure will receive increasing regulatory oversight, which in turn will require public and private firms to devote resources and management attention to reducing vulnerability to terrorist attack. How companies should organize to address their infrastructure vulnerability is another important subject that I will not address further here today.

Vulnerability to oil supply interruption. This afternoon, I wish to focus my remarks on the energy security aspects of oil and gas. Concern with this subject began in the 70s and 80s, in response to the then existing Soviet capability for direct military intervention across the Caucuses into the Middle East oil fields of Iran and other countries. The two OPEC instigated oil supply interruptions in the 70s made the public aware of our vulnerability to supply disruption and our dependence on imported oil. Many of our allies, notably Japan, France, and Germany, are even more dependent on Middle Eastern oil and hence subject at least implicitly, to the political pressure that this dependency implies.

Any economy is dependent on energy and has limited flexibility to respond to a price spike or an interruption of supply, or to substitute for energy, at least in the short term. As oil and gas resources are not distributed evenly around the world, the United States and its allies are dependent on imports of oil and gas from the unstable and often unfriendly Middle East. These nations may choose to abruptly stop oil exports for political reasons, so security of supply affects national security in a way that dependence on other imported raw materials does not. Moreover, the massive revenue that flows to oil exporting

countries, for example Iran, Algeria, Libya, and Iraq, are likely to have financed activities, such as terrorism, that threaten U.S. interests.

Finally the public wants cheap, affordable, and secure energy supplies. The public identifies foreign dependence with high prices (although opposite is probably true) and supports proposals that substitute domestic energy supplies for imported oil, often without examining or acknowledging, the economic cost of the trade-off. When oil prices rise, the public concern rises proportionally. In such times, the public's elected representatives support all sorts of measures – witness the 2005 Energy Act – intended to reduce dependency on imported oil and our vulnerability to supply disruption.

In the two and a-half decades since the OPEC disruptions of the seventies, nothing has happened to change our dependency and vulnerability to supply interruption. A few measures have been put into place to reduce the economic consequences of a supply interruption, such as national oil stockpiles and sharing agreements in the event of a disruption. In one sense, we are somewhat less susceptible to an interruption, because energy has become a smaller portion of our economy. On the other hand, imported oil is a growing proportion of the oil consumed by the U.S. and its allies, so at the least part of the economy that relies most strongly on oil – cars, trucks, and petrochemicals – is at greater risk. In addition, natural gas imports by the United States, Europe, and Japan are sure to increase, leading to a situation that resembles dependence on imported oil.

If this dependence and vulnerability on oil and gas is a national security matter, then it is reasonable to imagine that our national security policy instruments – notably our military forces – are either explicitly or implicitly sized in order to meet this threat of disruption. For example, the purpose of our naval carrier task groups and marine expeditionary forces could be interpreted as intended to provide the United States a military capability to intervene in OPEC nations, when a serious interruption of production occurs or is threatened. An extreme version of this view is that a large portion of our defense budget should be seen as a response to the desire for energy security. This is surely an exaggerated view. My experience is the U.S. military posture is determined by the capability needed to respond to a major regional conflict, perhaps in the Middle East, but just as likely in East Asia. I do not believe that intervention in other countries because of oil interruption has been or is a factor in determining the size or composition of U.S. military forces.

Yet, our overwhelming military capability is a reality, and it must inevitably cause any country (or sub-national group) to consider the consequences of purposefully undertaking an action that directly harms the U.S. In this sense, our military forces do act to some degree as a deterrent, and to my mind, this is a good thing. Our energy security (as it bears on petroleum dependency) might be prudently strengthened by an explicit policy statement that reinforces the obvious: The U.S. and its allies have an enormous stake in the stable and peaceful operation of oil markets, and if a politically motivated interruption occurs, the U.S. and its allies will consider all appropriate options for responding, not excluding the use of military force. This policy declaration might well be

stronger if it were a multilateral declaration of the OECD, NATO, or the G-7.

If an interruption occurred, what would be the capability of U.S. military forces to ameliorate the consequences? The answer, of course, depends upon the circumstances. For the sake of discussion, let's take the example of an unexpected coup by fundamentalists that deposed the Saudi royal family and established a new regime that decided to cease abruptly the production of oil for export. How might the U.S. military, assisted perhaps by the military forces of friendly countries, respond in this situation?

One possibility is that the U.S. would attempt to use the military to reverse the coup and replace the monarchy. I believe it is obvious that such a judgment would involve considerations that went well beyond assuring oil production. Security of oil supply, despite its importance, should not trump political dynamics in the country and in the region; there always is the question "once there, how do we get out?"

A second possibility is to give the U.S. military the more limited mission of seizing the oil fields and restarting production without further involvement in the politics of the country. Recent history – Somalia, Bosnia, Iraq – provides eloquent testimony of the futility of attempting surgical intervention, while avoiding political entanglement.

There are also massive practical obstacles to accomplishing this mission: significant numbers of troops are required because of the need to provide "force protection." Without force protection, take-over of the oil

fields would not be possible. Effective operation of the oil production system requires a great deal of training and exercises of the military units that would be involved. Training and exercises for this purpose competes with many other training demands, e.g. counter terrorism, disaster recovery, not to mention combat operations.

Finally, considerable time is required to plan and organize a military deployment, especially for its logistical support. It could well take six months or more to launch the take-over, by which time much of the economic damage of the postulated cut-off of oil would have occurred.

I believe it is prudent to conclude that direct military action is unlikely to have a major role in meeting energy security concerns.

Occasionally we hear the cogent argument that if dependence on imported oil has an external security "cost," then this cost should be internalized in the market place, either by placing a tax on imported petroleum or by providing governmental assistance to those energy alternatives that avoid or "back out" imported oil.

Conceptually, this is a sound approach. In practice, however, the approach fails, because a tax is unacceptable politically today, even when its proceeds are tied to expenditures designed to achieve a national security purpose. There is no agreed way to decide what the size of the "security premium" should be. And, it is very doubtful that our government would have the discipline to provide objective, analytically based estimates of the relative cost-effectiveness of

alternatives for backing out oil, so advocates would continue to claim security advantages for their preferred energy technology alternative.

China. China presents an example of a genuine and growing energy security problem. It is quite clear that China shares the conventional view about the security advantage of controlling oil and gas resources. Therefore in order to meet the increased demand for oil and gas to meet projected economic growth, China is determined to assure its access to petroleum resources. It is doing so in three different ways:

First, China is aggressively exploring for oil and gas within its borders and beginning the development of synthetic fuels from its abundant coal resources.

Second, China is aggressively buying assets in the world market, e.g., the China National Offshore Oil Corporation's (CNOOC) attempt to buy Union Oil of California (UNOCAL) to acquire UNOCAL's Asian gas reserves. The intensity of the adverse U.S. political reaction to the proposed transaction is testimony to the saliency of the energy security issue in this country.

Third, China is vigorously pursuing state-to-state arrangements, where energy deals involve a combination of commercial terms, concessionary economic assistance, and accompanying political arrangements, for example, in Kazakhstan, Sudan, and Venezuela.

It would be a mistake to see China's increasing presence in world energy markets only as the inevitable economic activity of a rapidly growing economy. The Chinese presence has political implications as well.

China will be in competition for natural gas and oil with other Asian countries – Japan, South Korea, Taiwan, Thailand, and Singapore – that also are dependent on imports. China's size and willingness to couple economic and political arrangements in their oil deals gives it an advantage over its neighbors.

Chinese energy trade with the Central Asian Republics places China in direct competition with Russia for control over resources that flow to Japan, Western Europe, and world oil markets.

China is sure to seek close political and economic ties with Middle Eastern countries, such as Iran, Iraq, and Saudi Arabia, in order to assure adequate energy supplies.

Energy competition contributes an additional element of strain and complexity to the United States (and other nations) - China relationship. However, I do not believe that this increased energy competition is likely to lead to military conflict by itself. Chinese growing military power, Taiwan, trade, human rights, intellectual property, and the environment are other difficult elements of the relationship. The growing domestic sentiment for trade restrictions against China is another worrisome trend.

It may be possible to manage these elements over time to craft a progressively more constructive relationship, but there is also the danger that the relationship becomes increasingly one of strategic competition. Energy security is just one of the factors that has the potential of moving us toward confrontation. If it to be avoided, there must be much more engagement on common energy issues between China and the United States than has been true in the past. The competition for oil and gas resources with China is emblematic of what the world will increasingly face as hydrocarbon resources decline.

I have discussed four different energy security issues: proliferation, protection of the energy infrastructure from terrorist attack, oil and gas supply disruption, and China. Each has a legitimate national security aspect. But note that each of these four topics (to which we should add global warming) has entirely different aspects: the problem origin, the international context, the available policy responses, and the responsible government agencies, are all different. The concept of energy security does not provide a useful unifying framework for dealing with these issues, because the problems are different; the only common attribute is the involvement of energy.

I conclude that energy security is too broad a useful concept. The issue that is on the public's mind is dependence on imported oil and vulnerability to oil supply disruption. This is an important security issue, but the solution is unlikely to yield what the public wants: greater independence and lower energy prices. And reducing foreign oil dependency is less a military matter than a matter of domestic policy

about deciding how much we are willing to pay to avoid imported oil and gas.