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Statement of Dr. Arjun Makhijani on *Securing the Energy Future of the United States*

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The United States is at an energy policy crossroads. The main security vulnerability revealed by the 1973-74 and 1979-80 crises was the uncertainty surrounding the supply of oil from the Persian Gulf. This vulnerability has worsened in the intervening years, despite diversification of sources of oil imports, since U.S. oil imports have risen from about a third to over half of oil consumption. But the terrorist attacks of September 11, 2001 showed that major facilities within the United States could be subjected to a massive attack. The immense scale of the loss of life and economic devastation that has followed those attacks should have served as a wake up call to review the very basis of energy policy and infrastructure across a broad front, especially as regards nuclear and oil-related vulnerabilities. Unfortunately, it has not.

The 1973 Arab oil embargo and increase in oil prices shook the United States out of its energy complacency. Warnings about the insecurity of oil supply prior to 1973 had seemed rather theoretical. After all, the Persian Gulf area was ruled for the most part by regimes that supported the U.S. government (in large measure because they had been set up or propped up by Britain and the United States). Moreover, oil production in the region was in the hands of U.S. and British-based multinational oil companies (then called the "Seven Sisters").

These seemingly favorable factors changed overnight, due to political events sparked by the 1973 Arab-Israeli war. They occasioned an immense debate, to which I was privileged to be a party, since I worked for the Ford Foundation Energy Policy Project, which was the first to show that economic growth could be decoupled in the United States from energy use growth. The result of that debate was a set of policies that produced nearly forty-percent economic growth between 1973 and 1985 without any increase in energy use.

It is simply stunning that the September 11 attacks did not cause the Bush administration to carefully review all the vulnerabilities in its energy plan, including those in the domestic infrastructure that could cause immense and, in some cases, essentially unrecoverable, damage.

Instead, it has continued to advocate essentially the same energy plan published in May 2001, with the exception that there is now some more urgency for filling the Strategic Petroleum Reserve.

In light of that signal failure, the Institute for Energy and Environmental Research decided to undertake a review of the vulnerabilities of the Bush administration's energy plan. We have concluded that that plan would increase vulnerabilities significantly in almost every area of concern.

On the nuclear front the Bush plan:

- would extend the serious vulnerabilities of spent fuel pools even if all the spent fuel were moved to subsurface storage when it is technically possible to do so.
- would create new vulnerabilities for nuclear proliferation, theft of plutonium and more severe contamination and destruction as a result of plutonium fuel use in commercial reactors
- may create new vulnerabilities if it continues on its recommended path of the Pebble Bed Modular Reactor, the current design of which does not have secondary containment which is the main guarantor of current nuclear power plants against most (but not all) terrorist attacks.

The Bush administration's energy plan would not even solve the problem of oil import vulnerabilities, despite opening up the Alaska Wildlife National Refuge and other sensitive areas to oil production. If the United States sticks to the course the Bush plan endorses, oil imports will double over the next forty years. That is an invitation to major problems, given the tensions and instabilities in the Middle East.

The politics of Central Asia, the Caspian region, the Caucasian region, and the Middle East, are becoming ever more tangled with the politics of terrorism and with the nuclear politics of Pakistan and India. Of course, this is in addition to the old-time nuclear powers, the United States, Russia, and China, who are present in the region. U.S. policy in Central Asia, like that of the other major powers, is closely tied to the immense oil and gas resources in the region.[1] Since September 11, the United States has introduced troops into Uzbekistan. The U.S. military presence in Central Asia is already showing signs of becoming prolonged, in the same manner as that in Saudi Arabia after the 1991 Gulf War. This could become a bone of contention between Russia and the United States, adding to the danger and complexity of the present crisis in the region.

Finally, the immense looming problem of global warming should not be regarded only as a crucial environmental issue, though it is surely that. It is also a huge economic and security issue because the scale of economic disruption and health damage that it could cause, while subject to considerable uncertainty, could be immense. Once set in motion it would be essentially irreversible. The reduction of carbon dioxide emissions should therefore be regarded as a security issue, especially in the context of the essential global nature of the rejection of the Bush administration's stance against the Kyoto Protocol, the treaty to reduce greenhouse gas

emissions.

We also developed our own plan that is aimed at reducing or eliminating many of these vulnerabilities over time. *Securing the Energy Future of the United States* is a result of that effort. It is a preliminary report of the global energy assessment work that the Institute for Energy and Environmental Research began well over a year ago. We focused on vulnerabilities in three key areas: nuclear facilities, oil imports, and electricity infrastructure. The Bush energy plan would substantially increase security vulnerabilities in every category, as the summary table and Figures 3 through 7 in the report clearly show.

The IEER plan relies on natural gas as a transition fuel to renewable energy. Wind energy can play a major role in the near future based on the current state of technology and resources. The United States can, with available technology more than triple the economic output per unit of energy use (the Bush plan implies an approximate increase of about 60 percent in the next forty years) because the gap between the available technology and public policy is so immense. The core of our energy recommendations are as follows:

- The United States should adopt an energy plan that would set goals for the long-term - a four-decade period. During this period, it must seek to essentially eliminate the most severe vulnerabilities to attack and reduce carbon dioxide emissions by about one-half by about 2040.

- A goal of an average efficiency of 100 miles per gallon for new passenger vehicles should be set for the year 2020. The efficiency goal should be accompanied by safety and emissions goals, so that all three issues can be coherently and simultaneously addressed.
- A national policy decision should be made to create regional distributed electricity grids in the next three to four decades. Regulatory changes should be geared to encouraging the achievement of a distributed grid, rather than a centralized national grid of interconnected local and centralized electricity generation. Local and state governments as well as regional and national associations of local and state governments should have sufficient authority and funding to oversee these distributed grids and to regulate them for performance using economic, reliability, security, and environmental criteria.
- Nuclear power should be phased out.

- The U.S. government should commit about $10 billion per year to purchase renewable energy, fuel cells, efficient automobiles, and other leading edge technologies that are not fully commercial in order to promote their commercialization. Another $10 billion per year should be given to state and local governments for the same purposes. This investment should be regarded as a critical national security expenditure and would amount to about 5 or 6 percent of projected Pentagon spending. This procurement plan should be in place of tax breaks and direct subsidies for efficiency and renewable energy sources. Tax breaks tend to keep the cost of technology high and retard progress. Targeted purchases of energy efficient products and renewable energy over the next ten to twenty years can provide a strong stimulus to private research and development, help create a manufacturing base, make some cutting-edge technologies commercial, and

rapidly reduce costs.

I hope that the Institute for Energy and Environmental Research will help spark a national debate on the desirability of simultaneously eliminating many major vulnerabilities and achieving economic objectives. I want to thank Dr. Brent Blackwelder, the president of Friends of the Earth for taking up this challenge and making a commitment to further that debate before the United States goes down the path of more energy insecurity and vulnerability as well as environmental damage that the Bush plan implies.