STATEMENT OF

MR. RICHARD CONNELLY

DIRECTOR, DEFENSE ENERGY SUPPORT CENTER

DEFENSE LOGISTICS AGENCY

HEARING BEFORE THE

TERRORISM, UNCONVENTIONAL THREATS AND CAPABILITIES AND READINESS SUBCOMMITTEES

OF THE

HOUSE ARMED SERVICES COMMITTEE

SEPTEMBER 26, 2006

Good afternoon, Chairman Saxton, Chairman Hefley, Mr. Ortiz, Mr. Meehan, and distinguished members of the Committee. I am Richard Connelly, Director of the Defense Energy Support Center (DESC), a field activity of the Defense Logistics Agency (DLA). I am pleased to have the opportunity to appear today to describe to you the efforts of the Defense Logistics Agency in support of Air Force and Navy efforts to introduce synthetic fuel into the streams of jet and marine fuels that we buy on behalf of the Department of Defense (DOD).

DESC's mission is to provide the DOD, and other government agencies, with comprehensive energy solutions in the most effective and efficient manner possible. These solutions include contracting support and management of all petroleum-based fuels, additives and other energy products and services including jet fuels, distillates, missile fuels, chemicals, gases, gasoline, diesel fuels, heating fuels, natural gas, coal and electricity. DESC also manages utilities, privatization and other installation energy conservation efforts. As such, I am responsible for assuring that the DOD has a strategic network and capability to provide the uninterrupted supply of clean fuel delivered to our military forces wherever and whenever they need it.

DESC continues to support the DOD in the Global War on Terrorism by providing fuel to the warfighter in support of Operation Enduring Freedom and Operation Iraqi Freedom, as well as other contingency and peacetime operations around the world.

The surging cost of crude oil over the past few years has made DESC's mission particularly challenging. Even though we pride ourselves on acquiring fuel for our troops at prices which meet or beat the industry averages, a crude oil commodity market reacts to world market events that impact both domestic and off-shore crude sources, which means the U.S. cannot control the world oil marketplace and must pay the sometimes painful market price. Since the domestic crude supply is more than adequate to fuel the military's domestic needs, domestically produced alternative fuels are useful to the military if they are cheaper than the petroleum products they replace, but they are not needed to keep the military's domestic operations running. Domestic fuel, whether it be petroleum-based or from alternative sources, cannot supply needs in Iraq and Afghanistan, so for those applications DOD must buy fuel on the world market.

DESC has been working for some time with Air Force, Navy, Department of Energy (DoE), and industry experts examining the potential for alternative domestic energy sources that might economically provide some relief from our dependence on the global marketplace for crude. Among these alternative technologies is the conversion of the United States' abundant domestic coal reserves to synthetic fuel using the Fisher-Tropsch Coal-to-Liquid manufacturing process.

In April of this year, the Air Force requested DESC poll industry regarding its ability to provide DOD with 100 million gallons of synthetic jet fuel (JP-8) beginning in January 2009, along with capacity estimates for future years. The Navy subsequently asked that DESC include 100 million gallons of synthetic JP-5 in the request. The

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Request for Information, or RFI, was released May 2006 and responses were due by August 10, 2006.

The RFI asked the respondents a number of questions including what their proposed feedstock would be, where their plant would be located, when their planned streams of synjet would become available, and what risk mitigation strategies they would be seeking to make such an enterprise practical from a business perspective. There was significant interest with 28 firms responding, 22 of which intended to manufacture synthetic fuel. Twenty of the 22 proposed using the Fisher-Tropsch Coal-to-Liquid manufacturing process, and 18 said they would use domestic coal. If such endeavors could acquire appropriate financing, the aggregate stream of synjet by 2016 would far exceed the amount necessary to supplant 50 percent of domestic DOD crude oil-derived jet consumption, which equals 38 million barrels per year out of the total 76 million barrels per year. The Energy Information Agency (EIA) projects in its Annual Energy Outlook 2006 that without subsidies or special contracts, U.S. production of Coal-to-Liquid fuels will be 277 million barrels per year by 2030.

The respondents identified significant risk mitigation requirements before they could engage in the development of a Fisher-Tropsch Coal-to-Liquid capability in the United States. Most identified a need for long-term contracts (15 to 25 years) with guaranteed minimum annual DOD purchases. In addition, most wanted a guaranteed minimum price for their product during the contract term. In essence, the respondents

could not provide their own risk mitigation and have requested that DOD assume most of the risk.

Both of these requirements are understandable from the manufacturer's perspective, but would expose DOD to a significant risk of paying much more than the market price for fuel. The primary barriers to commercial introduction of the technology have been: the uncertainty of world oil prices; the high cost of production coupled with high initial capital cost ($70 to $90 thousand dollars per barrel of daily capacity for the first U.S. plant, for a total cost of $3 to $8 billion for a full scale plant); and the long decision-to-production lead times (which could be in the seven year range). However, they both put most of the risk mitigation responsibility in the hands of the public sector and less of the responsibility on the private sector. The manufacturers want the length of the contract term to be commensurate with the term of the financing they need to pay back the major capital investment (15 to 25 years). The guaranteed minimum price would be to protect the industry initiative from a dip in the crude oil commodity market below the level of economic viability – precisely the scenario that doomed an attempt in the early 1980s to encourage synthetic fuel production when the futures markets were not yet available for private risk mitigation. We estimate that the crude oil price threshold to support development in the future to be in the $53 - $57 per barrel range. Oil prices are volatile and highly uncertain. For example, the NYMEX price of oil for delivery in December 2012, six years from now, has fallen to around $60 per barrel, 15% lower than they were just six weeks ago. If there were a long-term decline in the price, the U.S. taxpayer would lose large sums of money supporting the threshold.

Both of these risk mitigators—long-term contracts and minimum purchase price—are currently beyond our authority. DESC is legislatively limited to five year contracts and must pay fair and reasonable prices for its fuel. In addition, both of these requirements are outside our normal purchase practices for jet fuel which are tied to the market price of jet fuel. Many respondents also cited the availability of tax credits and DoE loan guarantees as essential to their ability to enter the synfuel business.

Furthermore, if you remove long-term market uncertainty, petroleum-based products may still be more economic than coal-derived liquids. For example, if there was a solicitation for competitive, long-term, guaranteed contracts for domestically produced diesel fuel, it is possible that plants producing coal-derived liquids would win those contracts, but it is also possible that domestic oil production would win the contracts and simply expand production to higher cost areas.

Another developmental challenge is that of carbon capture. The Fisher-Tropsch Coal-to-Liquid process produces almost twice as much carbon dioxide as the crude oil refining process. There is no current requirement for carbon capture in either process but there is concern in the industry that such will be required in the relatively near future and this requirement would raise the price of manufacturing a barrel of synfuel. Not requiring carbon sequestration in the contract would pose additional risk for the potential manufacturer should it be required in the future, and the price estimates cited earlier do

not include these costs, which may add about $5 per barrel. In addition, Fisher-Tropsch fuels do not have the lubricating capacity of current fuels.

Senior leadership in the DOD is still considering various options for the way forward. The limit of contract terms to five years and the requirement to pay market price were legislated for important policy reasons, which might have to be reconsidered if DOD were to enter into long-term guaranteed contracts for fuel. If the desired end is to mitigate the price fluctuations we currently experience through long-term guaranteed contracts for fuel (which might or might not be won by manufacturers by using Fisher-Tropsch Coal-to-Liquid technology), it increases the risk of paying above-market prices for fuel. If the desired end is solely to promote an industry that would produce a stream of synthetic jet fuel chemically indistinguishable from the crude-oil derived fuel using Fisher-Tropsch technology, the cost to the taxpayer may be significantly higher than the fair market price for similarly performing petroleum-based fuel. In either case, we would need to return to Congress for the legislative authorities previously discussed.

As we wait for a clearer picture of the way forward, and with the concurrence of the Air Force and Navy, we will solicit for synthetic jet fuel within the bounds of current authorities to determine if there is any interest. There is little doubt that the Fisher-Tropsch Coal-to Liquid manufacturing process can produce significant quantities of synthetic fuel that is fungible and interchangeable with the current supply of crude oil derived fuel. Without long-term contracts with price floors, financing Fisher-Tropsch Coal-to Liquid manufacturing processes will require confidence by the financial markets

that crude oil prices will remain above the threshold range of $53-57 per barrel over the long term (15 to 25 years). Long-term contracts with price floors would expose DOD to a significant risk of paying much more than the market price for fuel. The recent precipitous drop in the price of crude oil underscores the risk to the U.S. taxpayer of price floors and demonstrates why the financial markets are not confident that there will be sustained elevated prices and have not to date funded coal-to-liquids plants in the U.S.

In closing, DESC is dedicated to providing continuous energy support to the warfighter and will strive to fulfill its mission in every way possible.