

Proposal to Western Governors

The Clean Fuels Initiative

From the Office of Secretary of Defense

Executive Summary

The Department of Defense (DoD) is working jointly with the Department of Energy (DOE) to produce a variety of cleaner fuels from coal, petroleum coke, natural gas, biomass and shale oil resources. Given the West's vast reserves of these resources, DoD would like to open a dialogue with Western governors on the opportunities to the West that such an effort presents.

In addition to providing a more secure and affordable supply of cleaner fuels to our men and women in the Armed Forces, this effort also could produce clean fuels for use by local first providers, such as fire departments, police, ambulances, etc., as well as to the commercial sector.

DoD personnel, led by Dr. Theodore Barna, Assistant Deputy Under Secretary of Defense for Advanced Systems and Concepts, would like to brief Western governors and staff on this initiative during the Western Governors' Association's meetings in Washington, D.C in late February/early March.

Background

- ▶ The ever increasing reliance on foreign supplies of energy, in particular crude oil and finished transportation fuels (such as military jet fuel), imported from some of the most unstable regions of the world is a growing concern for the Department of Defense (DoD). In addition, the increasing use of the finite quantities of crude oil by rapidly developing nations, such as China, India, and other Asian nations, puts strain on the supply-demand balance and has contributed to the rapidly increasing cost of fuels for the military. Significant risky investment is going to be required to meet the world's energy requirements with the bulk of this investment currently slated for these unstable regions. Regional instability and competition for energy by developing nations could significantly influence the ability of the military to respond to worldwide situations.
- ▶ The U.S. military currently utilizes approximately 300,000 barrels per day of transportation fuels with 75% produced in domestic refineries. The vast majority of these refineries are clustered in mega refining centers along the coasts with a significant presence in the Gulf Coast region. Although the current system of supply, refining, and finished product distribution is very efficient and cost

effective in meeting the military and commercial sector needs, inherent risks and vulnerabilities are present. One such case was demonstrated by the disruptions caused by hurricane Ivan which hit the Gulf Coast in 2004. In addition, the past two decades have shown a significant decrease in the number of US refineries with the mega refineries being expanded to make up for lost US capacity. As a result the overall fuel supply diversity has diminished and supply-demand imbalance situations can occur when unplanned shutdowns happen.

- ▶ The DoD has been working towards a more universal (single battlefield) fuel that can be utilized in current and legacy system as well as enable the next generations of hybrid propulsion, fuel cells, and hypersonic vehicles. The U.S. Congress has supported one such program for Ultra-Clean fuel via funding the research and production of Fischer-Tropsch (also known as Gas-to-Liquids) jet fuels. Clean jet fuels produced under the Department of Energy's Clean Fuels Program in conjunction with Syntroleum Corporation (Tulsa, OK) have been evaluated by the U.S. Air Force, Army, and Navy and show promise in meeting the requirements of the military while reducing overall tailpipe emissions.
- ▶ The United States has approximately 25% of the world's coal reserves and approximately 1 trillion barrels of unconventional oil in oil shale. In particular, the western United States contains vast resources of coal and oil shale that could be used to provide secure supplies of fuel to the military, local first providers (fire departments, police, ambulances etc), and the commercial sector. Secure, diverse fuel supplies would provide security and could provide a steady supply of fuel during a crisis situation. Clean jet fuels can be produced via the Fischer Tropsch process from domestic coal, petroleum coke, natural gas and biomass. Secure domestic shale oil can also be refined into clean transportation fuels. The DoD is working jointly with the Department of Energy (DOE) to develop a national initiative to develop, test, certify, and use jet fuels produced from these alternative energy resources. As the western states hold large supplies of domestic resources, we are interested in coordinating at the state level to help catalyze the development of these resources, which could provide for supply security and diversity, facilitate job and economic growth, and provide more environmentally friendly transportation fuels
- ▶ Dr. Theodore Barna, Assistant Deputy Under Secretary of Defense for Advanced Systems and Concepts is the lead for this DoD effort and will be asked to provide a more indepth briefing to the Staff Council at their meeting in March.

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