Raytheon Technology Shows Promise in Extracting Oil from Shale Economically

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TEWKSBURY, Mass., May 8, 2006, 2006 /PRNewswire-FirstCall via COMTEX News Network/ -- Shale reserves, estimated at more than two trillion barrels in the U.S., are a potential source of oil that now may be economically unlocked thanks to technology developed by Raytheon Company and its partner, CF Technologies.

Raytheon's Integrated Defense Systems (IDS) business' radio frequency (RF) energy combined with critical fluid (CF) technology shows promise for efficiently extracting oil from shale.

"Raytheon is an expert in RF technology," said Lee Silvestre, director of Mission Innovation at Raytheon IDS. "What makes this effort a breakthrough is that similar RF technology that we have been applying in core defense products -- radars for tracking and guidance systems -- has demonstrated applications in the energy crisis."

Historically, the lack of an economical and environmentally friendly way for extracting oil from shale has kept it from being a significant energy source. Raytheon IDS and its partner, CF Technologies, located in Hyde Park, Mass., have struck upon a solution that could solve both the economic and environmental roadblocks.

"We have partnered with CF Technologies, a company expert in critical fluids processes," said Silvestre. "We are now talking with energy companies to license our unique, patent pending technological approach."

Combining RF and CF technologies provides a revolutionary way for recovering oil from shale reserves worldwide, according to John Moses, president of CF Technologies. Based on laboratory results and analysis, the oil produced is a light product, comparable to kerosene that can be produced by the unique process with high extraction efficiency.

"We took a systems approach to the energy problem," said John Cogliandro, Raytheon IDS chief engineer for the project. "Oil companies are under pressure to be more efficient in how they extract energy sources from the ground. Using our RF-CF technique provides a viable response to these pressures." In addition to producing more oil from shale formations, some companies may consider it an option for improving return from existing reserves that have been marginal, including heavy oils, tar sands and spent wells.

The development of this technology continues while outside experts are considering its ramifications.

Integrated Defense Systems is Raytheon's leader in Joint Battlespace Integration providing affordable, integrated solutions to a strong international and domestic customer base, including the U.S. Missile Defense Agency and the U.S. armed forces.

Raytheon Company (NYSE: RTN), with 2005 sales of $21.9 billion, is an industry leader in defense and government electronics, space, information technology, technical services, and business and special mission aircraft. With headquarters in Waltham, Mass., Raytheon employs 80,000 people worldwide.

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