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Distillate Fuel Alternatives to Rand Report

Additional submitted attachment is included below.

Distillate Fuel Alternatives to Rand Report

The Rand National Defense Research Institute on January 26, 2011 released “Alternative Fuels for Military Applications” see <http://www.rand.org/pubs/monographs/MG969.html>. Its lead finding: “It is highly uncertain whether appreciable amounts of hydrotreated renewable oils can be affordably and cleanly produced within the United States or abroad.” A subset finding: “Producing just 200,000 barrels per day of camelina or jatropha, about 1 percent of U.S. petroleum consumption) would require an area equal to about 10 percent of the croplands currently under cultivation in the United States.” U.S. camelina oil production of 5,000 bbls in 2009 was predicted to climb to 35,000 bbl in 2010; actual production dropped in 2010 because of no RIN approval by EPA for biodiesel made from camelina oil.

Deputy Assistant Secretary of the Navy for Energy Tom Hicks, in a chat held just hours after the report’s release, countered that “the authors just have not engaged the industry in an adequate way to get a really good sense as to what’s happening within the industry,” and further, that DoD doesn’t “really feel this is up to RAND’s standards for this type of work.” Hicks views this report as “more of an op-ed than serious research.”

This summary is sent following two meetings with staff for U.S. House sub-committees on January 29, 2011. Specific errors in the Rand report are contained in the individual records of those meetings; this summary addresses larger issues. Re growth of camelina, producing 50,000 bbl/day of jet fuel can be accomplished on ~1% of cropland, a majority of which is arid and marginally suitable for wheat. Camelina has been proven convertible via UOP’s Ecofining™ process, so can be minor feedstock to Diamond Green Diesel, with \$241 million DOE loan guarantee, with startup in January 2013. But camelina will always be a very minor feedstock.

The major finding of the Rand report is preference for Fischer Tropsch fuels, detailed on pp 63-66. But:

- Shell exited German JV for FT Fuels, Choren, in November 2009; FT process invented 1928 in Germany.
- Sasol cancels CTL project in Indonesia January 2011, citing estimate of \$10 billion for 80,000 bbl/day.
- Rentech’s FT Natchez project announced in 2006 has yet to secure financing for 30,000 bbl/day unit.

Other alternative for distillate fuels are available.

- The Mixalco process; see Prof Mark Holtzapple March 6, 2009 workshop at www.atlanticgreenfuels.com; process commercialization by Terrabon LLC is supported by Valero Energy and Waste Management.
- Conversion of corn oil to reach 500 million gals/yr as presented at World Bank meeting March 10, 2008.
- Neste Oil in June 2008 announced an 800,000 t/a plant to produce NExBTL renewable diesel in Rotterdam. Neste Oil announced its decision to go ahead with a similar-sized plant in Singapore in November 2007.

The common attribute of these distillate fuel projects is that a preferred feedstock is municipal solid waste (MSW), for obvious reasons of low cost and high-volume availability. These projects are producing for the commercial market because Section 526 of the Energy and Security Act (2007) forbids DOD from purchasing renewable fuels made from MSW. If the requirements by authors of the Rand report to deliver to DOD are combined with the criticism by Deputy Secretary Hicks, the only Rand choice was to choose from known alternatives. The net findings of Rand were understood earlier, as shown in AG-NASA workshops Sep 10, 2009 re use of ‘Barren Land Palm Oil’, and World Bank March 8, 2010 for corn oil as feedstocks for biojet fuel.

A review of Fred Kahn’s efforts to deregulate the U.S. airlines in early 1980’s, and failure in a 1990-92 effort to advise the former Soviet Union re a free economy, was sent on January 31, 2011. If Prof Kahn could testify in 2011, he might encourage a bipartisan approach to ‘deregulating’ EISA by voiding Section 526.

Joseph Degenfelder with Richard Kamin, US Navy
Atlantic Greenfuels February 1, 2011

Cc: Gavi Begtrup for Rep Gabrielle Giffords

Tara Rothschild, Ed Feddeman, Andy Zack, Jesse Lashbrook - U.S. House Science & Technology Committee