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Docket # 08-ALT-1 Advisory Committee Meeting May 23, 2011

2011-2012

Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program

Submitted by Oberon Fuels

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We would like to bring to the attention of the Advisory Committee meeting to discuss the 2011-2012 Alternative Fuels Investment Plan the following opportunity for inclusion:

Dimethyl Ether (DME) is in use in Europe and Asia as a clean burning alternative fuel for over 10 years¹ as a blendstock for propane, or run on a 100% neat DME basis. It is referred to on page 165 of the Alternative Fuels Investment Plan as a diesel substitute. We ask the Advisory Committee to include DME as a viable fuel production option that falls into several categories in the plan:

1. **As an additional natural gas option** in addition to LNG and CNG
2. **As an additional benefit to California's propane strategy** (propane blended with up to 20% DME produces environmental benefits, especially if DME is produced from renewable biogas from organic waste)
3. **As a biofuel**, given the ability to capture the methane and CO₂ from landfill, wastewater treatment and dairy operations, and convert this biogas into ready to use transportation fuel.
4. **As a diesel alternative for hard to serve vehicle groups:** we are an on-site generator of DME, able to serve the off-road and heavy construction industry, agricultural community in non-attainment areas, and municipal fleet operations that can be served by biogas.
5. **As a zero-emission fuel:** DME has the handling characteristics of propane, with no particulate matter emissions and minimal NO_x that can be mitigated at nominal cost.

¹ For more information see the website of the International DME Association – www.aboutdme.org



Oberon Fuels is based in San Diego, California and was formed last year. We are developing modular Dimethyl Ether (DME) production facilities based on existing technology² that we will build/own/operate at central refueling stations for the trucking industry and public or private fleet operators. There are two pathways given a choice in feedstocks:

1. Natural gas conversion to DME: an alternative fuel under Low Carbon Fuel Standard in California, a clean alternative to diesel and a strategy to reduce dependence on foreign oil.
2. Biogas conversion (methane and CO₂ from landfill gas, wastewater treatment facilities, dairy operations and other sources) to DME: a renewable fuel for neat DME or bio-DME blend with propane, for renewable classification under EPA's Renewable Fuel Standard II and as a strategy to address the need in California and in the US for carbon sequestration of methane and carbon dioxide from organic waste.

The objective of DME producers is to demonstrate that DME is the best environmental diesel substitute for compliance with US regulations -- but we are also in a race to demonstrate to the truckers the superior performance and handling of DME versus CNG and LNG. Truck operators face enormous cost increases with their diesel fleet -- the costly upgrades to comply with emissions controls on diesel tailpipes and engine certifications as well as rising diesel prices. CNG and LNG are heavily promoted and subsidies are in place and yet for certain truck classes and applications performance and handling problems have been identified. There is a window of opportunity to convince the end-use customer to consider DME, and there is the potential in California to have DME available in time to meet the goals and objectives of the California Energy Commission.

File: Oberon Fuels submittal to Docket #10-ALT-1/Call reports

² Syngas technology is currently in operation overseas on a refinery scale. Oberon Fuels is focused on a small-scale application that will enable production of 3,500 gallons/day of DME.