Biodiesel Fact Sheet – Cold Weather Properties

- Like petroleum diesel, biodiesel will gel in cold temperatures. This can lead to clogging or plugging of filters, or other parts of the engine.

- Just as petroleum diesel's cold weather properties will vary based on the crude oil used, refinery methods and other factors, biodiesel's cold weather properties will vary depending on feedstock used. Canola is the best feedstock for cold weather climates, which provides Manitoba produced biodiesel with a distinct advantage.[1]

- Between December 2007 and September 2008, the Alberta Renewable Diesel Demonstration (ARDD), Canada's largest cold-weather study of renewable diesel fuels, successfully demonstrated the on-road use of low level renewable diesel blends in a range of Canadian climatic conditions. The study found no significant problems resulting from the use of B2 (2% biodiesel) during winter months and B5 (5% biodiesel) during summer months. The complete report is available at www.renewablediesel.ca.

- It is expected that fuel suppliers and distributors will have a cold weather fuel management plan to ensure a problem free winter.

- The first measure is to ensure both fuels in the blend meet appropriate standards:

    - It is essential that the petroleum diesel being blended with biodiesel conforms to CGSB standards with regard to seasonal temperatures specifications; and

    - It is essential that the biodiesel meets the ASTM standard and that all blends meet the relevant blend standard.

- Other measures that can be used for managing cold weather issues with petroleum diesel can also be applied to biodiesel:

    - Using cold weather additives (Note: it is not recommended to introduce cold weather additives after the cloud point has been reached. Additives should be introduced before this point and distributed evenly throughout the fuel);

    - Adding kerosene to biodiesel;

    - Using block and filter heaters;

    - Storing your vehicles indoors.[2]

- All diesel fuel sold in Manitoba must meet a seasonally adjusted cloud point specification for cold weather performance. Biodiesel will negatively impact the cloud point, depending on the relative cloud points of the diesel fuel and the biodiesel. All biodiesel blends sold in Manitoba must still meet the seasonally adjusted cloud point for diesel fuel. Accordingly, blending of biodiesel, especially for winter use, should only be done by qualified blenders.

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[1] Société de transport de Montréal (2003), *Biodiesel Demonstration and Assessment with the Société de transport de Montréal (STM) – Final Report*, http://www.stm.info/English/info/a-biobus-final.pdf, accessed on 01/09/09; and Manitoba Energy Development Initiative (2005), *Biodiesel : Made in Manitoba : A Report by the Biodiesel Advisory Council to the Government of Manitoba*, http://www.gov.mb.ca/stem/energy/biofuels/biodiesel/files/biodiesel_report.pdf, assessed on 01/09/09.

[2] National Biodiesel Board, *Biodiesel Fact Sheet -- Cold Flow Impacts*, http://www.biodiesel.org/pdf_files/fuelfactsheets/Cold%20Flow.PDF, accessed on 01/09/09.