Recycling Online

Running trucks on FOG (fats, oils and grease)

by Roger Guttentag

Municipal waste management can affect environmental quality in at least three major ways. The first way is by designing programs that provide incentives to encourage waste reduction and recycling and makes it easy for residents and businesses to use those programs. The second way is by providing an environmentally-sound solution for disposing of unrecoverable waste materials. The last way, which includes the topic to be covered by this column for this month and the next, is operating your system in a manner that seeks continuously to adopt the most environmentally-preferable procedures for accomplishing its core mission.

In the case of collections, the source and utilization of your fuel assets probably has the most significant influence on the environmental footprint of your fleet. Currently, the principal fuel used by collection vehicles is diesel made from non-renewable petroleum feed stocks. There is, however, a lot of research and programs being undertaken to evaluate and promote the use of alternative fuels. A useful chart comparing these fuel options can be found on the Triangle Clean Cities Coalition site.

In a separate article in this issue of *Resource Recycling*, Dylan de Thomas will be focusing on compressed natural gas (CNG). However, this month I will be looking at Web resources that provide good overviews on biodiesel (BD) fuels. While BD does not reduce vehicles emissions as much as CNG, it has two distinct advantages. First, it can be used by any heavy duty vehicle that runs on conventional diesel fuels. Second, BD can be made from waste organic feed stocks such as fats, oils and grease (FOG) generated by commercial and industrial operations.

Getting to know BD

Biodiesel.org

Biodiesel.org is the public information site of the National Biodiesel Board (NBB), which is the national trade association for all organizations involved in the production, distribution, marketing or sales of BD products. The site is divided into five principal sections covering BD basics, usage, production, policy and news. Probably the most logical starting point is the explanation of BD basics found in the What is Biodiesel? section. After that, you should then consult the Using Biodiesel section which provides important information on such issues as where BD can be purchased, fuel quality standards, manufacturer positions regarding engine warranties and cold weather usage. In particular, the OEM Information page has a link to the Biodiesel Toolkit that provides downloads to a number of useful references including ASTM specifications for B20 and B100 fuels (the numbers represent the percent of biodiesel in the fuel mix – the B20 blend, for example, is 20 percent BD and 80 percent conventional diesel).

University of Idaho Extension (UIE)

The UIE has developed a very extensive set of online information resources on BD on a wide range of topics starting with a detailed but technically accessible explanation of what BD is and is not. From there, you can review a listing of BD topic links to other parts of the UIE site. Two that would be worth reviewing discuss the production of BD utilizing FOG derived from waste sources such as used cooking oils and animal fats from meat packing plants. From the perspective of a fleet manager, the sections addressing BD as a fuel source and product quality are also

Web Address Directory

Biodiesel Magazine	http://www.biodieselmagazine.com/
Biodiesel.org	http://www.biodiesel.org/
National Renewable Energy Laboratory – Biodiesel Publications Library	http://tinyurl.com/NRELBioD
Triangle Clean Cities Coalition - Biodiesel	http://tinyurl.com/TriangleBD
U.S. Department of Energy – Alternative & Advanced Fuels – Biodiesel	http://tinyurl.com/AFDCBD
University of Idaho Extension – Introduction to Biodiesel	http://tinyurl.com/UofIBD

recommended. The BD fuel quality page, in particular, does a nice job explaining what key specifications, like Flashpoint and Cloud Point, mean. If the information content on this site is not enough, there is an extensive library of links to other BD Web resources that can be followed.

Other BD technical resources

Alternative Fuels & Advanced Vehicles Data Center (AFDC)

The AFDC is part of the U.S. Department of Energy's renewable energy programs. Its BD section has a large online collection of publications dating back to 1994 that can be browsed or searched through a set of keyword filters by using the AFDC's main database. Two other resources that I want to highlight are its Alternative Fuel Pricing Reports and its information archive on BD incentives and laws. The former are PDF files that date back to May 2000 that currently show pricing trends for alternative fuels, including BD20 and BD100, in different regions of the U.S. AFDC information on BD incentives and laws is available on the federal and state level. State level information can be accessed by selecting a state from a U.S. map that has been color-coded based on the number of BD-related incentives or laws that have been enacted.

National Renewable Energy Laboratory (NREL)

NREL is a federal laboratory operated by the U.S. Department of Energy. You can find on this site a listing of online BD technical reports organized into four categories: production and use, quality, emissions and fleet evaluations. Probably the most practical of these is the Biodiesel Handling and Use Guide – 4th edition published December 2009 (not September 2008 as shown on the site) which covers B100 as well as BD blends such as B5 and B20.

BD industry information

Biodiesel Magazine (BM)

BM is a trade publication is that covers all aspects of the BD industry. In addition to a magazine (available online in a digital version), subscribers receive a weekly electronic newsletter and a BD plant directory. What makes this a good deal, for those who are interested in following this type of news information, is that it's also free (unless you live outside of North America, in which case there is a shipping and handling fee).

Next Month

My discussion of BD fuels will continue with a survey of websites that focus on how BD fuels can be used for fleet applications and provides examples of programs that have been developed to create a connection between the municipal recovery of waste FOG and its conversion into BD fuels.

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