

Unleashing the Potential: The Future of Energy in Michigan

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Frankenmuth, Michigan



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Renewable

Domestic

Soy Oil Based New Use Option

Biodegradable

Environmentally



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New Use

SOYOIL Based Options

Solvents:

- hand cleaners, parts cleaner, asphalt release, concrete release, graffiti cleaners, paint/varnish removers

Lubricants/Penetrates:

- Hydraulic oil, 2 cycle oils, bar chain oil, cutting oils, rust loosners, fifth wheel grease, gear box oils, railroad flange oil

Building Materials:

-wood/concrete sealers, Environ Biofiber, spray insulation



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Take Home Message:

“Increase Overall
Soy Biodiesel
Knowledge Level”



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Biodiesel Fuel

- 💧 What is it?
- 💧 Market drivers?
- 💧 Environmental/health issues?
- 💧 Policies promoting its use?
- 💧 Use in Michigan?
- 💧 Availability?
- 💧 *Future Market Drivers?*



Biodiesel Fuel

- ☹️ “Raw” oil cannot be directly used in internal combustion engine continuously
- ☹️ Produced through a “methyl ester process”
- ☹️ Can be made from variety vegetable oils or fats
- ☹️ Must meet ASTM D6751 standards
- ☹️ Biodiesel produced must be registered with EPA (40 CFR Part 79)
- ☹️ Bxx refers to blending levels with Petro Diesel
- ☹️ Cost/Benefit



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Market Drivers

... characteristics that help a product work its way into dollars and/or a *value* for which someone will be willing to investigate its use and/or pay.



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Market Drivers

- 💧 Little to no engine modification
- 💧 Easily splash blended
- 💧 Existing dispensing/storage facilities
- 💧 High energy balance: 3.2 to 1
- 💧 Lubricity enhancer
- 💧 B100 contains NO sulfur
- 💧 Proven winter blend use



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Market Drivers

- 🔹 No delay/phase in for use
- 🔹 No “over” blending concerns
- 🔹 Addresses Health concerns
- 🔹 Addresses Environmental concerns
- 🔹 Addresses Regulatory concerns
- 🔹 Addresses Imported oil concerns



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Awareness Issues...

- 💧 D6751 fuel standards adherence
- 💧 B100 cold weather handling
- 💧 Older engine fuel filter
- 💧 Engine/fuel warranties
- 💧 "Price Shop" for fuel



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Environmental/Health Benefits

Generally include:

- 💧 Lower toxicity
- 💧 Higher biodegradability
- 💧 Generally lower tailpipe emissions
- 💧 Lower lifecycle emissions of green house gases
- 💧 Address Clean Air Ozone Rules



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Tier I and Tier II Health Effects

- 💧 1990 Clean Air Act requirement
- 💧 ONLY alternative fuel to have completed
- 💧 \$2 million and four years into testing by soybean industry



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Policies Promoting Biodiesel (Biobased Use)

- 💧 Biodiesel fuel credit (EPACT 1992 Amendment)
- 💧 2002 Farm Bill for production incentive
- 💧 Potential marine engine emissions restrictions
- 💧 Biobased Product Purchasing Preference



Policies Promoting Biodiesel (Biobased Use)

- 💧 Executive order 13149
(reduce petro use)
- 💧 Federal Excise Tax Credit
- 💧 Renewable Fuels Standards
- 💧 Pending legislative initiatives
 - ✓ State – 2%/5% requirement
 - ✓ End User Incentives



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Industry Milestones 1992...

- 💧 Michigan Effort Began
- 💧 National Biodiesel Board Formed
- 💧 Demonstration Efforts
Soybean Committee running first of four diesel pickups on soy biodiesel blends (in excess of 600,000 miles)



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Present Michigan Biodiesel Use

- 💧 30 School districts
- 💧 26 State Parks
- 💧 8 County Road Commissions
- 💧 State and local governments
- 💧 National Parks (bio products)
- 💧 Universities (bio products)
- 💧 Utilities
- 💧 Agriculture (bio products)
- 💧 Bus companies
- 💧 Nature Centers
- 💧 Detroit Salt Mine (B100)



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Availability in Michigan

- 🔥 25 retail pump fueling sites
- 🔥 Over 100 retailers
- 🔥 Announced Michigan Production Sites



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Future *Market Drivers*

- 💧 EPA's ultra low sulfur fuel
- 💧 2007 engine specifications
- 💧 Marine market
- 💧 School bus market
- 💧 Health/Environmental concerns
- 💧 Imported oil concerns



Facilitation from Soybean Office

- 💧 Provider/Facilitator of Soy Biobased info
- 💧 Biodiesel/biobased supplier list
- 💧 www.michigansoybean.org
- 💧 E-mail to soyinfo@michigansoybean.org
- 💧 Willingness to work with you!



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