

Report Out I: Oils Utilization – 2012 Target

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A Scenario for Supplying 30% of 2004
Motor Gasoline with Biofuels by 2030

Biomass

Oils Utilization: Cost Target

- What is the cost target (or range) to be cost-competitive with petroleum diesel by 2012?
 - » \$0.20 to \$0.25 per pound bio-oil production
 - » Processing costs about \$.40 per gallon
 - » \$2 to \$2.25 per gallon biodiesel
 - » Produce 5.5 billion gallons of biodiesel and 80 billion pounds of protein, sugar, and cellulose feedstocks for fuels and chemicals
 - » Competitive with \$40 to \$45/barrel petroleum crude
 - » One-to-one equivalent price with rack price of petroleum diesel

Oils Utilization: Pathway Route

- What is the most likely strategy for successfully producing cost competitive biofuels?
 - » Biodiesel
 - » Soybean, corn, canola oils, and animal fats
 - » Transesterification/Esterification
 - » Cost target achieved by 2012

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Oils Utilization: Barriers (plant oils)

- Too much oil seed meal
 - » Find industrial use for protein, sugars, and cellulose co-products of oil production
 - » Focus on co-products that displace crude oil feedstocks
 - » Concentrate protein
 - » Separate cellulose from protein in high-yield crops
 - » Remove oil from corn prior to making ethanol in dry mills
- Too little oil & starch
 - » Not all animals can easily digest cellulose
 - » Increased oil content in oil seeds
- **Infrastructure**
- Low priority placed on biodiesel in biofuel goals

- **Capturing glycerol and soap stock products from biodiesel refining**

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Oils Utilization: Barriers (animal fats)

- Animal fats high in saturates, harder to convert
- Collection, infrastructure, contaminant elimination for waste greases
- Sulfur from hair in animal fats costly to remove

- Infrastructure
- Capturing glycerol and soap stock products from biodiesel refining

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Oils Utilization: Research and Development Needs

- Develop and demonstrate meal fractionation technologies
- Develop corn oil fractionation in dry mills
- New chemical transformation technologies
- Improve cellulose digestability in animals
- Research glycerine utilization
- Research hydrocracking technologies

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Oils Utilization: Policy

- Extend subsidies beyond biofuels
- Develop mandate for biodiesel
- Provide incentives for infrastructure, including rail and port
- Provide loan guarantee programs to farmers to mitigate investment risk for new market development
- Loan guarantees for germ fractionation of corn oil in dry mills
- Provide incentives to improve fuel efficiency, including raised CAFE standards and increased use of diesel engines

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Oils Utilization: Federal Role

- Support research for utilization of glycerine and protein
- Develop interagency protein platform for replacement of petrochemicals
- ID infrastructure needs and common elements across crops
- Reduce export barriers to increase the supply of animal fats
- Support streamlined permitting for biodiesel production facilities

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