

# Challenges and Barriers to Growth of Biofuels Industry

Planning Subcommittee Report

Biomass Research and Development Technical Advisory  
Committee

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# Subcommittee Report

- Feedstock Production
- Feedstock Logistics
- Conversion
- Infrastructure and End Use
- Cross Cutting Issues

# Feedstock Production

- The U.S. can achieve the feedstock production necessary to support 2012 biofuel production targeted in the Energy Policy Act
- There will be challenges with feedstock production 2012 and beyond to meet Energy Policy Act biofuel production targets
- Yield improvements are needed on all feedstocks
- All feedstocks must be considered (e.g., algae)
- A strategy to encourage farmers to grow energy crops must be developed
- Workforce availability
- Inputs must be managed for sustainability concerns (e.g., fertilizers)

# Feedstock Logistics

- Field/forest to plant harvest and transport
  - Harvesting technology
  - Transportation infrastructure
  - Drying and storage
  - Workforce availability
- Densification

# Conversion

- There is a need to increase the yield of traditional and advanced bio-conversion technologies (grain and non-grain based)
- Energy intensity of preprocessing (e.g., drying) needs to be minimized
- Synergies with fossil fuel refining need to be identified
- Further development of cellulosic thermochemical processes need to be explored in addition to bio focused cellulosic pathways

# Infrastructure and End Use

- Establish a strategy and timeline for mid-level blend transitions that allows infrastructure and end use issues to be effectively addressed
  - Pump recertification beyond E15
  - Address end use emission issues for automotive and small engines (EPA and CARB)
  - Fuel standards and fuel quality enforcement
  - Directly address high blend level (E85) infrastructure issues (e.g., pump and vehicle availability)
- Mid-level blend test plan sufficiency must be addressed (USCAR, CRC, DOE/EPA, CARB?)
- Some type of blend adjustment is needed by 2012

# Cross-Cutting Issues

- Need to understand national and global carbon lifecycle and other environmental impacts associated with increased production and use of transportation fuels (biofuels and petroleum)
  - More detailed lifecycle analysis tool usable at individual bio-refinery level (plant optimization)
  - Carbon debt (carbon release / land use change)
  - Increased support at national laboratories and private sector for LCA tools and thru-put
  - Build on existing tools (e.g., GREET, BEES)
- Workforce availability (feedstock production, trained technical workforce for bio-refinery operation, R&D)
- Food vs. fuel
- Engage states, academia and industry
  - Grants
  - Working level groups