

# Feedstocks Production and Logistics

## Recommendations

1. Develop strategies to encourage the utilization of woody biomass derived from federal, state and private lands, including non-plantation private lands and waste (msw). Possible strategies include:
  - any federally funded projects, including R&D projects, should not exclude utilization of these feedstocks;
  - stand establishment date (i.e. after enactment of EISA) should not be a factor in determining eligibility;
  - allowance of long-term contracts (i.e. 10 year minimum) for utilization of woody biomass from federal lands.

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2. USDA has a program called BCAP. This is a payment to farmers for biomass energy production. This program was authorized and funded. Now USDA must implement the rules. Our recommendation is to implement both the producer payment and delivery of biomass elements of the program by Jan 1, 2010 in order to meet biomass targets.

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3. There is limited scientific information to use as a basis for implementing indirect land use models. The Federal government should not use funding for speculative models. Need additional information on:

- Yield response to price
- Productivity of new land coming into production
- World wide yield data (most recent 2001)
- Not appropriate distillers grain replacement

All indirect land use models should be publicly available (i.e. transparent).

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4. There is a need to quantify the environmental, economic and social impacts of increased biomass feedstock supply on a watershed, regional and/or eco-region scale moving from small, replicated field plot trials to larger-size demonstration plantings. One example, could be the Regional Feedstock Partnerships that could be used to develop information on yield, sustainability, social issues, etc. of scale-up biomass feedstock production, monetizing environmental services.

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5. Eradication and/or control of invasive species is a concern for many states and federal agencies. Additional research is needed to help in the identification, development, and selection of appropriate systems that might be used to harvest, consolidate and convert invasive species to biofuels or biopower.

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6. It is difficult for people interested in biofuels or bioproducts to have information about funding opportunities for these programs. We recommend that DOE/USDA develop a comprehensive listing of all funding opportunities (i.e. grants, loan guarantees, producer payments) and make this list available to biomass researchers, producers and technology providers. The list should include the date of solicitation, deadline for applications, minimum and maximum awards and eligibility requirements.

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7. As it relates to procurement, various federal agencies should develop a common application form to the extent possible (i.e. budget, project purpose, cost share).

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8. We recommend the government conduct an economic impact study on production and conversion of biomass feedstocks to local economies. The study should include impact on farm income, jobs creation and impact on the local economy by siting a biofuel plant, biorefinery or biomass power generation plant in a community.



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9. Do not exclude utilizing food and feed crops as a feedstock for conducting R&D for conversion to biobased fuels and materials.

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10. R&D to develop best management practices for sustainable productivity of agricultural and forestry systems for biomass feedstocks. For example, offsite impacts, residue removal, yield increases, pesticide labels, crop insurance, etc.

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11. Develop technology for moving biomass from the field to the conversion plant (harvesting technology and automation/mechanization) to reduce labor costs. Evaluate the ability to use existing agricultural equipment to harvest high yield density materials. Evaluate the impact of low yield densities and co-harvest economics on transportation costs. Efforts to achieve more efficient drying and densification of both agricultural and forest biomass need to be accelerated to enable economic storage and transport. Consider innovative approaches such as pelletization and distributed primary conversion processes that yield an energy dense intermediate that is more cost-effectively transported. Demonstrate feedstock logistics through projects that deliver biomass to the conversion plant gate and show economic viability.

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12. Conduct additional research and development on (i) sequencing the genome of plants to identify new genes that will improve productivity of the plant (specifically biofuels yield) and understand the gene function of each gene that improves productivity, (ii) genetically modifying plants, and (iii) breeding programs as part of an integrated crop development effort to improve productivity. Plants should be prioritized by the scientific community.

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13. Facilitate the development of cellulosic feedstocks to reduce input requirements such as fertilizer, water and nutrients. Introduce new feedstocks to increase their availability for biofuels production, including already collected and aggregated feedstocks like municipal solid waste, woody wastes and food wastes (current feedstocks include corn stover, wood, cereal straw and herbaceous energy crops – miscanthus, energy cane, sorghum, switchgrass, CRP warm mix and CRP cool mix). In addition to feedstock production, address key feedstock logistics barriers in harvesting, transporting and storing cellulosic material. Continue to reduce input requirements such as fertilizer, water and nutrients, and improve the feedstock logistics for starch and oils.

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14. Develop strategies to encourage the production of non-traditional feedstocks, e.g. switchgrass, willow and for encouraging the simultaneous deployment of production and conversion of crops in order to encourage farmers to produce promising energy crops. Possible strategies include: an incentive program to move farmers to less-known cash crops; extension services to help farmers switch to energy crops; and additional funding for Land Grant Universities to study regional energy crops and in particular, yields, production practices, economics, and life cycle assessment.