FINAL COMMENTS FOR DIRECTION TO TECHNICAL WORKING GROUPS

Northeast Regional Bioenergy Feedstock Partnership Meeting
Ithaca, New York
November 11- 13, 2007

GENERAL COMMENTS

- Establish a Northeast Regional Feedstock Partnership to facilitate the development of biomass resources in the Northeast Region in order to fulfill the region's potential contribution toward meeting the Billion Ton Biomass Goal
- Relative heterogeneity of resources
- Developing the biorefinery industry is the ultimate goal
  - Identification through the FY2007 Awards
  - Recognize industry outside the solicitation

GENERAL COMMENTS

- **Recognition that this will be a multi-agency, integrated effort with public and private funding sources, and research/policy/marketing intricacies**
  - **DOE**
  - **USDA**
  - **Sun Grant**
  - **Regional Bioenergy Programs**
  - **Land Grant Institutions**
  - **Environmental Advocate Participation**
  - States
  - Industry
  - quasi-government institutions
  - Private funding
  - Foundations and other interest groups and stakeholders

CRITICAL OUTCOMES

- Assist in enabling deployment of resources according to the Billion Ton Study
- Support the integrated biorefinery industry and industrial partners
- Ensure lignocellulosic feedstocks are sourced in environmentally qualitative ways that we can quantify
- Enable markets to add value to feedstocks while assisting DOE and USDA in meeting programmatic goals
- Assure reasonable returns on investment to producers and consumers of feedstocks

SPECIFIC NORTHEAST REGIONAL GOALS

- Serve as a one-stop shop for information for biorefinery developers
- Assist coordinating specific agriculture and forestry sources that already exist in research
- Accurately describe existing feedstocks, as well as resources that could be developed
- Actively share research and development results to research and industry organizations
- Develop tailored collaboration with partners within and across Regional Partnerships

NATIONAL STEERING COMMITTEE

- Phillip Badger, General Bioenergy, subcontractor to Southern States Energy Board
- Carmela Bailey, USDA CSREES
- Kathy Baskin, Southern States Energy Board
- Kevin Craig, DOE Golden Field Office Project Management Center
- Mark Downing, Oak Ridge National Laboratory
- Carolyn Drake, Southern States Energy Board
- Don Erbach, U.S. Department of Agriculture
- John Ferrell, U.S. Department of Energy Office of the Biomass Program
- Rick Handley, Northeast Regional Biomass Energy Program
- Richard Hess, Idaho National Laboratory
- Laura Neal, U.S. Department of Energy Office of the Biomass Program
- Terry Nipp, Executive Director, Sun Grant Initiative
- Tim Rials, Sun Grant Center of Excellence at University of Tennessee
- Bryce Stokes, USDA Forest Service
- Sam Tagore, U.S. Department of Energy Office of the Biomass Program

MORE SPECIFIC BACKGROUND

- **Selection of the Technical Teams**
  - **Based on resource groups relevant to the north central region**
- **Selection of Tech Team Leaders**
  - **Suggested for their willingness to move the team forward**
- **Selection of Tech Team Members**
  - **Willingness to bring mental resources to bear for these public efforts**
- **Future of each of the Technical Teams, and their Leaders and Members**

Technical Teams or Working Groups

GIS
Crop Development
Infrastructure and Policy
Economics and Systems analysis
Ag wastes and residues
Lignocellulosic and herbaceous perennials
Starch and oilseed crops
Forestry and other wood
Woody crops
MSW
Other potential feedstocks

Crop Residues Teams

- **Any existing or potential agricultural residues and wastes, but could be more inclusive**
- **Historical crops records vs future potential yield**
- **What's the standard format for data?**
- **What are the residues?**
- **What things are unique in the NE region?**
- **What are the known and unknown logistical issues**
- **Vertical vs horizontal integration of the enterprises**
- **What's the current market – what resources might be exploited?**
- **What are the processing requirements?**

Starch and Oilseed Crops

- **Objectives**
- **Crop Selection**
- **Synergies**
- **Crop processing opportunities**
- **Lignocellulosics**
- **Crop integration**
- **Potential footprint**
- **Path forward**

Lignocellulosic Perennials - Feedstocks Technical Teams

- Critical Questions:
- 1. Identify areas in NE states where potential land base and potential feedstock could be available to supply 50 million gallons/year biorefineries in a radius of 25 miles.
- 2. Identify areas for which insufficient information is available to answer question 1.
- 3. Identify “holes’’ in lignocellulosic crop production systems for the Northeast States.
- 4. Identify “opportunity areas” where research could have the greatest impact on bioenergy production from lignocellulosic crops in the NE region.

Sustainable Forest Resource Technical Team

- **Data needs**
- **Forest biomass production needs**
- **Harvesting and collection needs**
- **Wood pretreatment**
- **Transportation and handling**

Sustainable Woody Crop Development Technical Team

- **Four focus areas**
  - **Feedstock production and management**
  - **Harvest and delivery systems**
  - **Utilization, products, and conversion**
  - **Disposal**

Current knowledge
New information or technology needed
Options to address missing/needed data
Identify human resources/collaborators needed
Suggest products summarizing/synthesizing

Technical Teams or Working Groups

4 Integrating Working Groups –

- **GIS**
- **Crop Development**
- **Economics and Systems analysis**
- **Infrastructure and Policy**

Integrators

GIS and Economic analysis

- **Evaluate and recommend documented and validated:**
  - **Regional datasets**
  - **Data sources**
  - **Models and tools**
  - **Economic assumptions**
  - **Analysis methodologies**
- **In an effort to support:**
  - **Agricultural biomass**
  - **Forest biomass**
- **For utilization for producing:**
  - **Biopower**
  - **Biofuels**
  - **Chemicals and other products**

GIS and Economics

- #1 Identify and compile parameters that determine commercial feasibility, sustainability and environmental acceptance of growing, harvesting, and using biomass
- #2 Identify and compile existing and potential resources: quantities, distribution, and qualities for:
- #3 Analyze “production and availability, both current and potential” and “what costs to the gate” [“what are the opportunities and values (only commodity?) for use] under selected scenarios of time scales, technology, policy, markets, and social implications
- #4 Validate and document databases, models, and analyses assumptions

Program Component		RESOURCES (Production)	ENGINEERING AND USE
Data needs	Parameters	Factors of production to be considered	Factors in harvesting, handling, transport and logistics
Data sources	Databases	NASS, FIA, TPO, NRI	ASAE data, EPA, Phyllis
Analyses and assumptions	Models and other tools	POLYSYS supply curves LCA Integration of production and demand to determine values and supply/demand relationships	IBSAL, LCA
Scenarios	External uses	Time, technology, ag, energy, policy, competition, social issues, deployment, rur devel	

Technical Teams or Working Groups

- **Communications**
  - **What are the tools?**
    - **http://www.feedstockpartnership.biomass.govtools.us/**
    - **http://bioenergy.ornl.gov**
    - **http://yoursite.edu**
  - **What to communicate to whom, and through use of which vehicles?**

Communications Working Group

- BFIN Site Addition of Regional Partnership Page
- SunGrant Biomass Monograph Project
- Topics:
  - Identification of other communication and information dissemination tools existing in the region
  - Identification of key audiences in and outside of the region
  - Discussion on roles during remainder of the workshop

Infrastructure and Policy

- Outcomes:
- A compilation of policy actions that will promote the Northeast Region's contribution to deploying a billion tons of feedstocks
- Identification of analyses that can lead to additional policy recommendations
- Identification of appropriate stakeholders and partnerships that are instrumental in affecting change in accomplishing the objectives of the working group

Technical Teams or Working Groups

- **Policy**
  - **Federal legislation and regulation**
  - **State legislation and regulation**
  - **Economic competitiveness**
  - **Survey Working Groups**
  - **Needs and Priorities**

Environmental Interactions

- **Land use shifts based on assumptions in BTV and based on previous discussions in the 30 X 30, 20 in 10, and other visioning sessions – what assumptions are being made, what is "regional"**
- **Technology advancements driving land-use changes**
- **Identification of the real vs perceived environmental benefits and costs (increments and decrements)**
- **Existing vs potential federal and state land use policy changes that might need to occur**
- **Identification of specific land, water, soil, wildlife and avian issues**
- **What do we know about effects – what do we need to know?**
- **Phenotypic selection, accelerated domestication, genetic advancement, and yield per unit area**

SUMMARY

- This exercise may generate more questions
- This exercise will not generate a report that sits on a shelf
- This effort must contain a directive for the region with coordinated roles and responsibilities for agencies and persons
- These efforts will require monetary resources

SUMMARY

- This effort will require recall of 30 years research work on resources, engineering, plant science, silviculture, policy enabling measures, and an understanding of the relevance to today's markets in energy, agriculture, and the environment
- This effort will involve leaving your own pet technology and private self-serving interests at home

SUMMARY

- **This effort will require significant interaction with other Regional Partnership activities**

- **This Partnership is necessary because no one person, nor entity has been able to, nor can achieve what this assembled group will be able to**

SUMMARY

- **This effort will require many persons from varied disciplines who are not in the room and have no understanding that we are here**

- **All of us understand the cost of not developing this Partnership activity is actually higher than being here for three days**