

**Summary:**

**Biomass Research & Development  
Technical Advisory Committee  
Meeting**

**February 24-25, 2003**

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# Meeting Summary

## Purpose

On February 24-25, 2003 a Biomass Research and Development Technical Advisory Committee (Committee) meeting was held at the Hilton Crystal City Hotel in Arlington, Virginia. The Committee was established by the Biomass R&D Act of 2000 (Biomass Act). The Committee's mandates under the Biomass Act include advising the Secretary of Energy and the Secretary of Agriculture, facilitating consultations and partnerships, and evaluating and performing strategic planning. This meeting was the first Committee meeting held during the 2003 calendar year. Members of the federal agencies that comprise the Biomass Research and Development Board gave presentations to the Committee on their agencies' FY03 and FY04 biomass-related research and development activities and related budgets. After reviewing these presentations, the Committee met with the members of the Biomass Research and Development Board (Board) to discuss the Committee's overall views of the federal portfolio for biomass research and development and to discuss future plans for interactions between the Committee and the Board. The following provides a summary of the meeting's discussions.

February 24, 2003

## Introduction

John Ferrell, Designated Federal Officer of the Committee, opened the meeting by introducing himself and reviewing his duties as Designated Federal Officer, as specified in 41 CFR 101-6.1019, which are as follows:

- a. Must approve or call the meeting of the advisory committee;
- b. Must approve the agenda;
- c. Must attend the meetings;
- d. Shall adjourn the meetings when such adjournment is in the public interest; and
- e. Chairs the meeting when so directed by the agency head.

Glenn English, Committee Co-chair, inquired as to what the responsibilities are of the Committee Co-chairs. John Ferrell replied that the responsibility of the Committee Co-chairs is to conduct the business of the meeting. Glenn English added that the Committee is independent and appreciates the assistance and advice of the agencies in performing its duties. As an independent Committee it determines on its own when to meet and calls itself to order.

John Ferrell said that the Committee has already had an impact on increasing the level of coordination between the Department of Energy (DOE) and the Department of Agriculture (USDA) as well as other federal agencies and highlighted some of the interagency activities that have recently occurred, such as:

- Cooperation between the seven agencies of the Board to develop an interagency matrix of biomass research and development activities;
- Increased meetings and discussions between DOE's Biomass, Hydrogen, and Science offices;

- USDA and DOE development of a joint biomass solicitation under Section 9008 of the Farm Bill;
- Agriculture, Smoke Management and Air Quality Workshop which was lead by the Environmental Protection Agency (EPA) with assistance from DOE, USDA, and the Department of Interior (DOI);
- Increased DOE involvement in USDA's Biobased Products and Bioenergy Coordination Council meetings and activities;
- Development of a Memorandum of Agreement between DOI, USDA, and DOE on policy principles for forest and woodland biomass and wood fiber utilization;
- Agricultural Residues Workshops for Corn Stover and Wheat Straw being jointly planned by DOE and USDA to be held in late April; and
- DOE and USDA are working together to develop a Feedstock Infrastructure Roadmap for Agricultural Residues, which will be primarily focused on Corn Stover and Wheat Straw.

Glenn English then welcomed all the Committee members to the table and extended a special welcome to the new members of the Committee. He said that the Co-chairs of the Committee will be sure to provide the Committee with whatever it needs to do its job. He said that the Committee was created by Congress to advise the Secretaries of Energy and Agriculture. The increased level of coordination between the agencies is encouraging and he hopes that the Committee will continue to make a positive contribution to furthering biomass research and development. This is the third year of the Committee's activities and it is now hitting its stride in determining its mission and how it can be the most productive.

In reviewing the Committee's activities from the last year, the Secretaries of Energy and Agriculture requested that the Committee complete a vision and roadmap document for biomass research and development and the Committee spent its 2002 work year completing those documents. The Committee also reviewed the projects that USDA funded under Section 9008 of the Farm Bill as required by the Biomass Act and found that the projects funded were in line with the Biomass Act's requirements. The Committee's work schedule for 2003 provides for an in-depth review of the federal portfolio of biomass research and development activities and to make recommendations for future budgets as well as issues surrounding commercialization, technology transfer, and education.

In order to get a better understanding of the federal biomass portfolio from the agency presentations, Committee members made the following suggestions:

- Larry Walker asked that the agencies address education and training in their presentations and specifically how these activities comply with the specifications of the Biomass Act.
- David Morris asked that the agencies address in their presentations how much of their FY04 and FY05 budgets are already contracted out so that the Committee can get a better understanding of the pool of money into which they can have input.
- Glenn English said that it would be helpful for the Committee to determine what percentage of the overall federal budget for biomass is being earmarked. A large amount of R&D is earmarked which leaves the administration without much discretion in terms of their funding and nullifies the Committee's ability to have input.

- William Nicholson said that it would be helpful for the agencies to inform the Committee on the reason to stop funding for specific R&D programs, for example, funding was stopped because of technology failure or because the technology was ready for commercialization.

### **Federal Advisory Committee Act Roles and Responsibilities**

John Herrick, Chief Counsel for DOE's Golden Field Office, Office of General Counsel, gave a presentation (*Attachment A*) to the Committee on the ethics, roles and responsibilities of Federal advisory committees.

The federal government looks at Advisory Committees with open arms and encourages their participation and advice. In terms of responsibilities, Committee members are required to recuse themselves from participation in any Committee activity that would have a direct and predictable effect on the companies, organizations, agencies, or other entities with which they are associated, or in which they have a financial interest. In order to clarify that statement, David Morris asked if it meant that if the Committee is looking at the federal government's R&D budgets and making recommendations about certain areas, then Committee members whose companies have an investment in a specific R&D area should recuse themselves from discussing that portion of the budget. John Herrick responded that Committee members can always participate in conversations that involve generalities. The statement applies more to the review of proposals or discussions that relate to specific financial decisions for specific companies. The Committee as a body will never be involved in evaluating proposals, however certain members of the Committee may be asked to serve on a panel along with other evaluators.

David Morris then asked for an indication of what specifically the Committee is absolutely not allowed to do. Douglas Kaempf, Program Manager for DOE's Office of the Biomass Program, replied that the Committee has expressed interest in being involved with the development of DOE and USDA's joint solicitation for FY03. The Committee can be involved in that process by providing general guidance on the procedural level, but providing the Committee with specific details about the solicitation would give the Committee members who may apply for the solicitation an advantage over the general public so involvement to that extent will not be allowed. The agencies will never provide any information to the Committee of a confidential nature that would lead to a conflict of interest for Committee members.

Glenn English asked what prohibitions exist to prevent the Committee from advising Congress. John Herrick said that the Committee's role is to advise the Executive Branch, specifically the Points of Contact for the Secretaries of Energy and Agriculture. There is no statutory prohibition to the Committee as a whole advising Congress, however, he recommends that this step only be taken if Congress specifically asks the Committee for advice. The Committee was established by Congress, however, there is no definite rule as to whether or not direct conversations between Congressional members and the Committee as a whole are allowed. It would be permissible for individual members of the Committee to speak with members of Congress on issues of concern. Glenn English asked if he as Co-chair of the Committee could go to members of Congress and advise on behalf of the whole Committee. Merlin Bartz, Special Assistant to the Under Secretary of Natural Resources and Environment, USDA stated that this Committee is required

to submit a report to Congress for each year that funds are allocated for the Biomass Initiative. If the Co-chairs hand delivered that report to Congress, then the Committee would have the conduit it would need to speak with members of Congress. John Ferrell clarified that the Committee's report to the Secretaries of Energy and Agriculture is attached to the agencies full report to Congress on Biomass Initiative activities.

David Morris stated that the Executive Branch has already made plans for the next three years on how it will spend its money, so the only avenue through which the Committee can have an immediate effect is with Congress, and that is who they need to speak to. If the Committee's interactions with Congress are a grey area then those interactions are not prohibited and the Committee should go into the grey area until someone tells them that interactions with Congress are absolutely not allowed. John Herrick agreed with the Committee's interpretation of the situation. Glenn English stated that the Biomass Act does not specifically state that the Committee can only submit one report a year to Congress. The Committee can send a report up to Congress on a monthly basis if it decides to. Douglas Kaempf stated that if the Committee goes outside of the legislation it can follow any course of action that it deems necessary. John Herrick stated that he would look into the situation further and get back to the Committee on the exact legal boundaries for the Committee's actions. Glenn English stated that the Committee would like clarification on what it cannot do as well as what it is required to do versus what it is allowed to do.

### **Overview of USDA FY03 and FY04 Biomass R&D Budgets and Portfolio**

Merlin Bartz, Special Assistant to the Under Secretary of Natural Resources and Environment, USDA, gave a presentation (*Attachment B*) on USDA's FY03 and FY04 Biomass R&D budgets and portfolio. Merlin Bartz noted that there were some corrections and caveats to the information that USDA had prepared. Information is missing from the Rural Development mission area, however, he will get the information to the Committee. David Morris asked if the R&D budget for the Rural Development mission area was a large amount of money. Merlin Bartz stated that it is in terms of allocations from the Farm Bill.

Merlin Bartz noted that the \$50 million reduction in the Farm Service Agency for the Commodity Credit Corporation (CCC) from FY03 to FY04 is based on the fact that \$150 million was the cap set for the appropriations however, the funds expended never reached that level. Therefore, the cap for FY04 was set at a lower more reasonable number and does not reflect a reduction in the budget. Glenn English asked what happens to funds in the CCC that are not expended. Merlin Bartz stated that to his knowledge funds not expended are reverted.

William Guyker asked if there was a report available on the Natural Resources Conservation Service's efforts in feedstock handling. Bryce Stokes of the Forest Service replied that a single compilation report does not exist but there are several good reports that could be provided to anyone interested. William Guyker asked if the results of the work look promising. Bryce Stokes said that there are still some economic barriers that need to be overcome but that overall the results are promising. Merlin Bartz said that he would distribute the FS reports to the committee.

David Morris asked for details concerning the Memorandum of Understanding (MOU) between DOE and USDA on hydrogen and fuel cell technology that is detailed in the report from the Office of the Chief Economist. Roger Conway, USDA, said that DOE and USDA worked together to develop a draft of the MOU on hydrogen and fuel cell technology as they relate to rural economies and agriculture. USDA has not done much work in the area, so there are no areas of duplication, but the agencies know each other's capabilities and will work out the collaborative effort in the implementation of the MOU. The Committee could play a future role in helping the agencies define the specific responsibilities. David Morris said that it would be useful for the Committee to get an idea of the hydrogen projects that USDA will be working on or hopes to be working on in the future.

David Morris asked about the \$1 million in the Office of Energy Policy and New Uses (OEPNU) for Federal procurement of biobased products and how that money was being spent. Marvin Duncan, OEPNU, said that \$900,000 of those funds went to Iowa State University to develop an electronic information system to post biobased products for preferred procurement for use by Federal Agencies. Contracting to Iowa State for the effort allows the work to be done more quickly than if it were to be done within USDA. William Guyker asked if a certification system would be put in place for the biobased products that are put on the preferred procurement list. Marvin Duncan said that the regulations will require a minimum percentage of biobased content in order for products to be made available on the preferred procurement list and a logo will be created for marketing purposes to identify what those products are. William Nicholson said that there currently are international standards for labeling, which should be incorporated in the event that the products are moved offshore.

William Carlson asked about the footnote on page 24, which indicates \$7 million of unspecified work for the Forest Service. Howard Rosen said that those funds cover a large area of crosscutting work that did not quite fit into any areas of the Committee's Roadmap so it was excluded from the matrix.

Some general comments made regarding USDA's portfolio of biomass research and development included:

- Edan Prabhu said that the bulk of USDA's expenditures go towards making more biomass rather than converting that biomass into higher value products.
- John Hickman stated that the Committee made recommendations in prior years that plant science work be shifted from DOE to USDA and from the presentation it looks like that shift is beginning to occur.
- John Wootten noted that the bulk of the money that USDA is spending for biomass research and development is in the bioconversion work in the Agriculture Research Service and the Commodity Credit Corporation work under the Farm Service Agency.

The Committee had several questions regarding the USDA portfolio that the agency staff was unable to provide answers to at this date but will try to do so in the near future:

- David Morris asked for the overall budget for the four regional centers under the Agricultural Research Service.
- David Morris asked to see an assessment of the CCC program and its strengths and weaknesses.

- Larry Walker asked for a breakout of the in-house versus extramural funding for USDA.
- William Nicholson asked how big the budgets for research within USDA are relative to the economies of the related industries.
- Glenn English requested that each mission area indicate what percentage of their budget is earmarked.

William Guyker asked if it would be appropriate for the Committee, based on these presentations, to point out to Congress areas of duplication between the agencies and to name the agency where the Committee felt the work should reside. Merlin Bartz stated that the purpose behind the Committee requesting that all of the agencies' information be presented in the same format enables the Committee to see clearly where efforts are being duplicated. If multiple agencies have duplicative efforts or efforts that could be coordinated, then the Committee should point those out.

## **Overview of DOE FY03 and FY04 Biomass R&D Budgets and Portfolios**

### Office of the Biomass Program

Douglas Kaempf, Program Manager for DOE's Office of the Biomass Program gave a presentation (*Attachment C*) on the FY03 and FY04 portfolio for biomass research and development activities.

Douglas Kaempf said that the Office of the Biomass Program and its budget are broken down into the two major areas of Advanced Biomass Technologies R&D and Systems Integration and Production. In terms of the overall budget, the total appropriation for the Biomass Program for FY03 is \$114,706,000, however, earmarks will amount to approximately \$27,900,000. The Committee has a great interest in the DOE's plans for future year budgets, however, earmarks make planning difficult. Budgets are always planned with the expectation of no earmarks and when earmarks occur discretionary funds are the first to go.

David Garman has indicated that the Committee has a say in where the overall program is headed, however, there is no telling as to how quickly that can be affected. Douglas Kaempf said that he feels that, overall, the Biomass Program is close to the Lugar Bill and the Committee's Roadmap. In addition to those documents, the Biomass Program does have goals guided by DOE and EERE toward which all of the R&D investments are geared, which are:

- Direct replacement of fuels to reduce U.S. dependence upon foreign sources of petroleum, and
- Spur the creation of a U.S. bioeconomy.

The Committee's guidance can be helpful in ensuring that the program is heading in the right direction to meet those goals, in identifying where gaps are, and where duplication is occurring. Funding for FY03 and beyond is concentrated the most on platform development, such as sugars and syngas, which has a tie to hydrogen. The most important part of the program is the R&D on fuels, chemicals and materials. Chemical production from biomass can get more facilities out there that are making co-products, such as fuel, as part of their biorefineries.



David Morris asked what has happened in thermochemical technologies to cause DOE to raise funding in that area. Douglas Kaempf said that analysis on thermochemical pathways was funded heavily by DOE until 1986 and then the funding was reduced because the technologies did not seem economic. However, in recent years other countries have done great things in pyrolysis and there is growing support for the Fisher-Tropsch process. The program decided to take a step back and do the analysis on thermochemical pathways to see where exactly are the economics.

William Guyker asked about the decision to end co-firing. Douglas Kaempf said that the co-firing program was graduated because the Department determined that it was economically beneficial to co-fire biomass with coal. William Nicholson said that it would be good for the Departments to provide reports on what happens to technologies once they are graduated and whether or not they have become successful. Douglas Kaempf said that there are a number of factors that affect the success of a good technology and the focus of the Biomass Program is R&D rather than commercialization. The Energy Information Administration does have data on co-firing and which can be provided to the Committee.

Douglas Kaempf introduced Mike Pacheco, the first director of DOE's National Bioenergy Center. The Center is the Biomass Program's partner in strategic planning and will take the lead in bringing the labs together and determining each lab's resources and unique capabilities.

William Nicholson asked where the administration got the idea that black liquor gasification would move forward without the federal government's support. Douglas Kaempf said that those decisions are made at the highest level. However, there is always controversy about what the government's role is for research and development. Many believe that government's role ends at the point that the technology is ready for full-scale demonstration.

Larry Walker asked what contributed to the overall reduction in the Biomass Program budget from FY03-FY04. Douglas Kaempf said that with black liquor gasification being phased out the thermochemical conversion area took a large hit. The small modular biomass program is also being phased out.

Kim Kristoff asked if there was any funding from the Biomass Program in energy from landfill waste. Douglas Kaempf said that the Biomass Program does have \$3,000,000 going towards various earmark projects that have an animal waste-to-energy piece, as well as an Small Business Innovate Research (SBIR) project that also focuses on animal waste to energy.

### Office of Science

John Houghton provided the Committee with a high-level overview of biomass activities carried out through DOE's Office of Science (*Attachment D*). The Office of Science (OS) funds basic research in support of DOE's missions of energy security, national security, environmental restoration, and science. OS has a budget of several billion dollars, and the research it supports encompasses such diverse fields as materials sciences, chemistry, high energy and nuclear physics, plasma science, biology, advanced computation, and environmental studies. There are two offices within OS that have direct relevance to biomass: the Energy Biosciences Office and

the Biological and Environmental Research Office. The Energy Biosciences program supports fundamental research needed to develop future biotechnologies related to energy. The Biological and Environmental Research Office, similar to the National Science Foundation, develops the knowledge needed to identify, understand, anticipate, and mitigate the long-term health and environmental consequences of energy production, development, and use.

William Guyker asked if OS only funded analytical work as opposed to demonstrations. John Houghton said OS does only fund basic research. OS supports the technical work of DOE's Office of Energy Efficiency and Renewable Energy (EERE), so if a proposal came through that supported demonstration work and OS thought that the proposal was of value they would forward that proposal to EERE. John Houghton said that OS would welcome any advice that the Committee might have on basic research.

### **Overview of DOE/USDA Joint Solicitation**

Merlin Bartz and John Stierna of USDA provided the Committee with a one-page summary of the process and time-line for the Joint Solicitation (*Attachment E*). DOE and USDA are currently putting the final touches on the solicitation and hope to have it out on the streets by March. There will then be a 60-day period for submissions. The plan is to have one joint solicitation each year 2003-2007 as provided for in the Farm Bill. DOE and USDA will each serve as the receiving office on an alternate year basis. The process includes a joint scientific peer review of the proposals submitted. Once the proposals have been scored for technical merit, they will be sent to each agency for separate programmatic reviews. Once finalists have been recommended, DOE and USDA will refer those proposals to the Board for consideration and final selection. Contracting of selected projects will be carried out separately by each agency.

### **Committee Perspectives on USDA/DOE R&D Portfolios and Joint Solicitation**

Glenn English asked Committee members if they had any comments based on the morning's presentations on the DOE and USDA portfolios or the joint solicitation.

William Guyker asked how Committee recommendations regarding changes to the R&D portfolios would be received by the agencies and if they would take actions to address those recommendations. Glenn English said that it is a question of proposed budgets versus appropriated budgets. It is not unheard of for Congress to insert or strike programs from budget requests when they appropriate the final budget. In the past, agency administrators have been known to exclude projects from the budget request knowing that Congress would insert them into the appropriation.

Glenn English said that officials focus on the short run versus the long run. Thomas Ewing asked if the cuts in agencies are ones that will garner support from Congress. Glenn English said that the biomass lobby in Congress is not strong.

John Ferrell said that the federal budget for biomass research and development has reached a critical point. While the National Energy Policy and the national desire for oil displacement create strong support for biomass there is a positive level of credibility for the biomass program.

The question remains for legislators as to what the overall impact of biomass is and if it can make a difference in the near term. The Committee has been given information on USDA and DOE's budgets. If the Committee disagrees with the current budget levels or with investment direction, then they should notify the agencies as well as offer advice on programs and other long-term issues. Merlin Bartz said that, from the USDA perspective, the numbers for biomass are pretty solid. Congress does have the discretion to reprioritize and could possibly rescind portions of the Farm Bill however they most likely will not.

Committee member comments on the DOE and USDA's portfolios of biomass research and development included:

- William Nicholson said that black liquor gasification was cut even though it was listed in the Roadmap as an activity that should be demonstrated. He would like to recommend that black liquor gasification technology will not move forward without funding from the government to mitigate the risk that companies will incur by investing in the technology.
- John Hickman said that in looking at both DOE and USDA's budgets it appears that there may be several programs that are the same but they may not actually be duplicative. He is encouraged to hear about the increased amount of coordination between the agencies and hopes that the agencies continue to seek opportunities for coordination.
- David Morris said that liquid carriers are the most direct route to hydrogen, which makes ethanol a prime candidate. More coordination needs to take place between DOE's Hydrogen and Biomass programs.

William Guyker said that the information presented on DOE and USDA's portfolio needs to be more compatible in order for the Committee to efficiently compare the work of the two agencies. Merlin Bartz said that it was a difficult task to even get the budget information together for all of the different mission areas. Each mission area has a different history, different statutes, and other advisory committee's that drive them. USDA will try to reformat their information so that it looks more similar to DOE's however it will be difficult.

Glenn English said that it is good that the two agencies are so different because it would be disadvantageous for them to be the same. Merlin Bartz said that the farther the agencies go in coordinating and not duplicating they become better candidates for reorganization or elimination. The better hope is that the efforts being carried out by the two agencies are complementary. John Ferrell said that, over the last 10 years, USDA has moved into new areas and its portfolio of activities has changed creating areas where critical questions still remain.

Committee member comments on the Joint Solicitation process included:

- Larry Walker said that he would like to see the Universities play a large part in the applicant pool.
- David Morris said that USDA's mission is profoundly different from DOE's and to design a new solicitation based on DOE's past experiences would be a step back because the same groups that applied last year will end up applying again this year. Merlin Bartz said that the DOE and USDA are coordinating on the solicitation as directed by the Farm Bill. The universe of projects will be very large which will encourage a large and varied applicant pool.

## **Overview of the Federal Environmental Executive Biomass Activities for FY03 and FY04**

Julie Winters gave an overview on the Office of the Federal Environmental Executive's (OFEE) biomass-related activities (*Attachment F*). OFEE is focused on tracking the progress and reporting to the President on the Federal purchasing of biobased products. OFEE is tied to the EPA and does not actually have its own budget. OFEE's existence and mission are tied to a suite of Executive Orders, issued prior to the Farm Bill, that focus on greening of the government. As a member of the Board, OFEE would like to see the Board:

- Consider serving a coordinating role for university work to avoid duplication of effort and wasted resources. Multiple efforts exist at the university level to engage in biomass R&D, including biobased product and market development.
- Recognize that biobased product purchase policies, in addition to the intended goal of building markets for biobased products, are also environmental stewardship policies.

## **Overview of Department of Interior Biomass R&D or other Activities for FY03 and FY04**

Pete Culp gave an overview of the Department of Interior's biomass-related activities for FY03 and FY04 (*Attachment G*). There are no bureaus within the Department of Interior (DOI) that specifically carry out biomass research and development however there are some bureaus that handle biomass-related policies such as the removal of wood from forests to reduce fuel loads. These biomass activities are far less mature than other renewable activities within DOI and they do not have a specified budget but the potential of the programs is great. DOI has the following programs, which provide biomass feedstock opportunities:

- The National Fire Plan
- The President's Healthy Forests Initiative
- Bureau of Indian Affairs Forestry Management Program
- Bureau of Land Management Forestry Management Programs

## **Overview of National Science Foundation Biomass R&D and other Activities for FY03 and FY04**

Bruce Hamilton gave an overview of the National Science Foundation's biomass-related activities for FY03 and FY04 (*Attachment H*). The mission of the National Science Foundation (NSF) is to advance the frontiers of science and engineering through support of research and education. The major areas in which NSF supports research grants are:

- Biomass Engineering and Biotechnology
- Metabolic Engineering (Interagency)
- Technology for a Sustainable Environment (with EPA)
- Integrative Plant Biology
- Ecological and Evolutionary Physiology
- Plant Genome Research
- Project 2010 (*Arabidopsis* functional genomics)

NSF funds up to about 100 grants at any time, of which one-third to one-half are biomass-related. Information on every grant that NSF has funded over the last ten years, such as abstracts and summaries, can be found at [www.nsf.gov](http://www.nsf.gov). Thomas Ewing, Committee Co-chair, asked if

NSF experiences earmarks in their budget. Bruce Hamilton said that they definitely receive direction on the general areas of research, but not on what grants to award.

### **Overview of Office of Science and Technology Policy Biomass activities for FY03 and FY04**

Gene Whitney gave an overview of the Office of Science and Technology Policy's biomass-related activities (*Attachment I*). The Office of Science and Technology Policy (OSTP) serves as a source of scientific and technological analysis and judgment for the President with respect to major policies, plans, and programs of the Federal Government. OSTP provides annual budget direction to federal agencies on science through a joint memo with OMB in the Spring. Gene Whitney said that he was very impressed with the policy section of the Committee's Roadmap as it covers all issues that OSTP focuses on. Policy issues of interest to OSTP include:

- Energy supply/energy security/energy independence
- Greenhouse gas emissions
- MTBE
- Farm-rural economy/national economy
- Transition to hydrogen energy economy
- Federal R&D portfolio/budget

### **Overview of Environmental Protection Agency Biomass R&D or other Activities for FY03 and FY04**

Jean-Mari Peltier gave an overview of the Environmental Protection Agency's biomass-related activities (*Attachment J*). Jean-Mari Peltier complimented the Committee on their Vision and Roadmap documents. She said that there are problems looming on the horizon in the farm community for which alternative solutions need to be developed. From the Environmental Protection Agency's (EPA) perspective, more recognition needs to be given to the three pillars of the Biomass Act: energy security, environmental quality, and the farm economy. EPA would like to see goals for biomass industry be more environmentally driven than the goals set forth in the Committee's Vision document. The EPA would like to see specific milestones/goals set for the environment within the Vision.

The roles that EPA can play in furthering biomass research and development are:

- Effect regulations for biomass research, production, processing, use, and disposal;
- Authority and programs to increase biomass use and grow biomass markets;
- Value biomass environmental benefits, and assess environmental costs of biomass projects; and
- Test, certify and verify biomass initiatives.

### **Committee Discussion on Overall Federal R&D Portfolio and Activities**

Thomas Ewing asked the Committee if they were ready to make an overall assessment of the federal portfolio.

Jack Huttner said that the Committee has been asking for increased integration between DOE and USDA since the Committee's inception and he feels that the agencies have done a good job

in coordinating to pull together the budget information. The Committee now has the information it needs to provide recommendations to the agencies. David Morris said that the Committee does not have enough scientific information to make sound judgments regarding the federal portfolio of biomass activities. The Committee should not be mesmerized by the budgets because that is not an area where the Committee can exercise a great amount of control. William Carlson said that the apparent lack of wiggle room within the federal budget due to the large amount of earmarks as well as out-year committed funds is frustrating. At the end of the day, policy is what will push biomass technologies forward and make them economically competitive. John Hickman said that a Programmatic Review of both DOE and USDA programs would be the best way for the Committee to get a detailed look at the research being carried out and to provide recommendations.

John Ferrell said that the Committee needs to decide what things they want to bring before the Board during tomorrow's meeting. The Committee also needs to decide if it wants to follow its current work plan or if it wants to take things in a different direction.

Jack Huttner said that the top issues that the Committee should address are how to allocate the FY05 budget, the biomass tie to hydrogen, and policy. The Committee should make it clear that they believe that the quickest and best route to hydrogen production is through biomass and identify the role that hydrogen can play in the biorefinery. The Committee should also try to connect with the Hydrogen Federal Advisory Committee to see what they are working on and if biomass is on their radar screen. The Committee could also revise the Roadmap to address Hydrogen.

Jack Huttner said that the Committee should address Hydrogen but also be careful to address what it has been charged to address in the Biomass Act. Thomas Ewing said that, when he was the House sponsor of the Biomass Act, he felt that biomass was part of the big picture but not the only answer to the nation's energy problems. The Committee was set up to drive the Biomass Act and make sure it is being carried out by the agencies. The Committee's focus should not be on reforming the government but on keeping focus and attention on biomass and what it can do. Thomas Ewing said that if the Committee does its job promoting biomass then it will be there when hydrogen catches up.

February 25, 2003

### **Committee Discussion on Interagency Board Meeting**

Glenn English, Committee Co-chair, opened the meeting. He said that the Committee should develop a plan for their meeting with the Board that afternoon. The Committee needs to describe its role and impress upon the Board the importance of the Committee's recommendations and guidance. Since the Board does not meet that often, this is a great opportunity to ask questions and interact. The Board does not have to adhere to the Committee's recommendations, however, it does need to be receptive to the Committee's views.

Larry Walker asked if the Board has Co-chairs. Merlin Bartz said that, as stipulated in the Act, David Garman and Mark Rey serve as Co-chairs of the Board. He said that Assistant Secretary Garman and Under Secretary Rey viewed the afternoon's meeting as having the following purposes:

- For the Committee and the Board to get acquainted since this is the first time that the two groups will meet.
- For the Board and the Committee to determine how they will interact in the future.
- Figure out various roles, responsibilities, and duties between the Committee and the Board.

William Guyker asked for a description of the FY03 solicitation process and what role the Board and Committee will play in the process. John Ferrell said that the solicitation is set up in accordance with the Biomass Act and the funding came from the 2002 Farm Bill authorization. To develop the solicitation, DOE and USDA went back to the criteria developed in the Biomass Act and put together a broad based proposal. The selection factors for this year will be different from those used in FY02, and there will be two procurement offices involved. Some of the issues that will need to be dealt with are cost share and movement towards commercial applications. Merlin Bartz said that Committee's concerns about the FY02 process were communicated to the agencies. For FY03, the agencies will make sure that the joint solicitation again has a competitive technical and merit review process. The FY03 process will involve both agencies equally. The universe for the FY03 solicitation will be made as large as possible and the Board will work to ensure that projects selected meet the criteria of the Biomass Act. USDA will provide about \$16 million for the FY03 joint solicitation and DOE will be providing about \$2-3 million.

David Morris said that, for FY03, the agencies should focus on proposals submitted by small businesses, where they can get a bigger bang for their buck, rather than larger companies. John Ferrell said that funds provided under section 9006 of the Farm Bill support business development and tend to lend more support to small businesses and ranchers. William Horan said that small business proposals should be awarded if they rightfully deserve to, however, awards should always go to whoever has the ability to make the project happen.

Glenn English said that David Garman has said that the Committee's purview is the entire DOE biomass program and asked what the Committee's purview is over USDA. Merlin Bartz said that Mark Rey has said that the Committee should have a purview over all biomass programs within USDA, however, Mark Rey only oversees one mission area, Natural Resources and Environment. Other mission areas in USDA have to answer to other statutes and limitations aside from the Committee.

The Committee developed a possible list of topics that they would like to address during the afternoon meeting:

- Determine how the Board views the Committee, what kind of interactions they will have and how receptive the Board will be to Committee recommendations.

- Determine the relationship between the Board and solicitations issued under the Initiative and recommend that solicitations be funded in accordance with the Vision and Roadmap.
- The Committee should make a case for biomass versus other agency programs to ensure that the budget for biomass stays strong.
- Express the Committee's expectation for the Board to provide coordination between agencies and to affect a more global view of biomass to make it successful.
- Discuss the different cultures of DOE versus USDA and reinforce the need for USDA and DOE to work together and avoid duplication of activities.
- Help the Board prioritize where their limited funds should go, such as rating areas of the Roadmap based on their possible impact.
- Sketch the Vision and endgame to the Board and emphasize the need for a strong mix of politics and policy.
- Emphasize that the Biomass Act supports more than just R&D and education plays a large role in biomass research and development and should be encompassed in the FY03 solicitation process.
- Convince the Board that investments made now will be worthwhile in the long run by filling in the cracks to push projects to commercialization.

### **Public Comment**

Millicent Moore of the Tennessee Valley Authority gave a presentation to the Committee (*Attachment K*) on the development of their Acid Hydrolysis project.

David Morris asked what is preventing cellulose to ethanol from being in the market by 2003. Millicent Moore said that TVA has invested approximately \$60 million in cellulose to ethanol technology and would like to see a transfer of technology. TVA will partner with a company to build a plant, but will not build a plant on its own in order to transfer the technology.

Evan Hughes, a consultant on biomass and geothermal energy, read a statement prepared by himself and Tom Tanton (*Attachment L*) that he intends to submit to the Secretaries of Energy and Agriculture regarding the significant role that biomass electricity will need to play in the achievement of the industrial biorefinery. Various groups are studying biomass and championing it because they believe that it will be the low-cost way to produce energy in the future.

William Guyker asked for an update on co-firing projects in the United States. Evan Hughes said that there are less than 10 co-firing projects in the United States that are at the commercial stage. As a follow-up, William Guyker also asked about plants that are not co-firing but are using a composite fuel that contains a percentage of biomass. Evan Hughes said that the EPRI (Electric Power Research Institute) Biomass Interest Group is currently supporting a composite fuel project with DOE that burns plastic and biomass together with some sewage sludge.

William Carlson asked Evan Hughes to comment on the effect that the threat of Standards of Performance for New Stationary Sources (NSPS) reviews has on co-firing plants. Evan Hughes



said that the threat of NSPS reviews are a barrier and discourage some from getting involved with co-firing plants, however, many organizations have avoided NSPS reviews.

Kim Kristoff said that it is hard to determine the competitiveness of biofuels to petroleum because the real cost of petroleum fuel is hard to determine. Evan Hughes said that he had not done any significant research into determining the real cost of petroleum. Although, there will be a premium price on all products produced from biomass, there will be a market for those products even at the premium price.

The Renewable Fuels Association submitted written comments, which are included as Attachment M.

### **Joint Meeting of Board and Committee**

The following agency staff participated in the joint meeting as representatives of the Biomass Research and Development Board (Board):

- David Garman, Assistant Secretary, Energy Efficiency and Renewable Energy, DOE
- Mark Rey, Under Secretary, Natural Resources and Environment, USDA
- Bruce Hamilton, Director, Bioengineering and Environmental Systems Division, NSF
- John Howard, OFEE
- Pete Culp, DOI
- Jean-Mari Peltier, Counselor to the Administrator, EPA
- Kathie Olsen, Associate Director for Science, OSTP

David Garman, Board Co-chair, said that the Secretaries of Energy and Agriculture recently invited John Howard to serve as a member of the Board due to his relentless effort in requiring federal agencies to account for themselves in the purchase of renewable and biobased products. The government is the number one purchaser of biobased products and OFEE is giving each agency a report card on how it's meeting the requirements for renewable product purchasing.

Glenn English welcomed the Board members to the meeting and expressed the Committee's appreciation for the opportunity to meet with the Board on an informal basis. The Committee asked to make a few statements regarding the Committee's Vision and Roadmap documents as well as the support the Committee feels is necessary to further biomass research and development.

Jack Huttner spoke on behalf of the Committee regarding the Committee's Vision document. He expressed the Committee's commitment to furthering the contribution of biomass to the nation's economy. He read the Committee's vision statement, as indicated in the Committee's *Vision for Bioenergy & Biobased Products in the United States*, which is:

*“By 2030, a well-established, economically viable, bioenergy and biobased products industry will create new economic opportunities for rural America, protect and enhance our environment, strengthen U.S. energy independence, provide economic security, and deliver improved products to consumers.”*

Since the organization of the Committee, the federal agencies have made tangible progress in creating a more integrated, systematic approach towards achieving the strategic goal of developing integrated biorefineries. The Committee hopes to continue in their role of providing strategic guidance to the Board and the Secretaries of Energy and Agriculture about their progress. The Committee feels that biomass is a viable route to developing energy and rural economies and biomass technologies are on the verge of becoming commercially realized and economically viable. The Committee is there to assist the federal agencies in whatever way necessary to help achieve their biomass goals.

Edan Prabhu spoke on behalf of the Committee regarding the Biopower section of the Roadmap. Biomass is the “other” renewable resource that offers benefits and opportunities that other renewable energy resources, such as solar and wind, do not. Most importantly, unlike other renewable energy resources, biomass causes damage if it remains unused. Biomass currently produces more energy than any other renewable resource however there is still a large portion of biomass that remains unused. There are a number of barriers to the production of energy from biomass and it has become increasingly regulated by the EPA. There are a number of opportunities to develop plants to produce power from biomass, and the waste created from biorefineries creates a perfect opportunity for waste-to-energy production. All biomass is local and provides local solutions to power issues, such as producing power from small modular systems directly on a farm. The Roadmap lists all the research that the Committee feels is needed to further biopower technologies. He urged the Board to help make biomass “the” renewable energy resource.

Robert Boeding spoke on behalf of the Committee regarding the Transportation Fuels section of the Roadmap. The goals that the Committee has envisioned for biofuels are that they will comprise 4% of the national demand for transportation fuels by 2010, 10% by 2020 and 20% by 2030. Biofuels, biodiesel, and ethanol, supplied at the Committee’s recommended levels, will provide significant environmental benefits and a reduction in air toxins. After reviewing DOE and USDA’s program presentations, it does appear that the R&D that the agencies are supporting is in congruence with the Committee’s Vision and Roadmap, specifically in the area of process technologies. Energy security and energy supply security are a considerable problem for the administration and biofuels pose a logical solution.

Robert Dorsch spoke on behalf of the Committee regarding the Biobased Products section of the Roadmap. Globally, the chemical and materials industry is a \$2 trillion enterprise, of which the United States contributes 40%. Biomass provides the only renewable resource for the carbon building blocks that support the organic chemicals market. The possibility of the biorefinery and the chemical industry coming together is powerful and the realization of that possibility will inherently reduce the nation’s dependence on petroleum, provide environmental benefits, and increase rural development. Producing the Vision document has been a lot of hard work, however it exists due to the sustained effort by USDA and DOE to keep the Biomass Initiative moving forward. The Roadmap focuses the important technological advances that are needed to catalyze the conversion of biomass to higher value chemicals. The Committee trusts that they will be able to enlist the support of the federal agencies in their activities to further biomass research and development.

William Nicholson spoke on behalf of the Committee regarding the Public Policy section of the Roadmap. The Committee feels that beyond research, public policy has the most important effect on the development and utilization of biomass. Policy has the ability to jumpstart actions and move things quickly. The administration has many tools at its fingertips through which it can influence the development of technologies, such as taxes, subsidies, and regulations. The administration also has the ability to create demand for technologies and products like its policies for federal biobased purchasing. The technologies are out there however they sometimes need help to advance. Most importantly, the intellectual resources of the country need to be strengthened through educational policies. There is a lot of misinformation out there that needs to be corrected. Educational programs need to be established, not only in the K- 12 arena, but also in the land grant, private and public universities in order to train the future innovators of the country.

Thomas Ewing closed the opening comments by saying that he worked with Senator Lugar to get the Biomass Act passed during his last year of Congress. The Biomass Act is the reason that the Committee and the Board are in existence, and both groups have a responsibility to try to advance the use of biomass as a renewable resource. He commended DOE and USDA for the extraordinary effort they have made to cooperate and he hopes that it is occurring throughout the federal government. The Committee realizes that biomass is just one of a number of solutions to the nation's energy problems. However, biomass stands out because it creates a good economic climate in rural areas and it is environmentally friendly. It is a challenge to promote biomass because the industry is multifaceted and not cohesive, so the Committee needs the Board's support to assist in promoting biomass to the public and to policy makers. The Committee works on a voluntarily basis and works hard because they believe in the cause of biomass as an energy source. Completing the Vision and Roadmap was a great achievement however neither document will have long-term meaning if the Committee and the Board do not advance the cause. The development of the biomass industry will be so slow and gradual in coming that it lacks the political impetus it needs to make it a constant priority. The Committee needs the Board's support in order to make biomass as high a priority as possible for the nation's decision makers.

Mark Rey, Board Co-chair, thanked the Committee and congratulated them on completing the Vision and Roadmap. The Committee has an exceedingly important role in contributing to the work of the federal agencies. The agencies have reviewed the Vision and Roadmap and they are currently using it as a benchmark for comparing their programs. With the Vision and the Roadmap complete, the agencies are now depending on the Committee to complete a detailed analysis of the full federal portfolio of biomass research and development activities.

David Garman, Board Co-chair, thanked the Committee for sacrificing their time and effort to participate in Committee activities and said that he would like to start by addressing the issue of the DOE budget. The DOE budget has had a tough year and funding for biomass programs is down. Part of the decrease is due to the close out of the black liquor gasification program. The decision to close out the program came about because the technology was viewed as being too close to commercialization. The DOE biomass budget was also reduced because it was thought that, with the passing of the Farm Bill, there would be enough new resources on the Agriculture

side to cover biomass activities. It is too early to tell, but it appears that the level of earmarks in the FY03 budget is down from FY02, which comprised 44% of the budget. When the percentage of Congressional earmarks gets up to 44% of a budget that is probably an indication that Congress does not have confidence in the federal agencies. The reduced level of earmarks in FY03 may be an indication that Congress feels that the agencies are getting their act together thanks to the assistance of the Committee.

Overall, the Committee should not read too much into the budget reduction and assume that it is an indication of biomass becoming less of a priority activity. Biomass research and development is a long-term activity, which is illustrated by the goals that the Committee set forth in the Vision document. However, progress is being made and the fact that the agencies are coming together and unprecedented joint work is occurring at the political and work levels should be celebrated. Of particular note is the first ever joint biomass solicitation that is being developed between DOE and USDA. This is also the first ever joint meeting between the Committee and the Board and, building on what the Committee has already achieved to date, the Board is extremely optimistic that the agencies can achieve the goals that they have set for biomass research and development. He also said that the agencies have not done a good enough job of publicizing the Committee's accomplishments and will work to change that. The Committee needs to continue to assess the progress of the agencies and offer any advice that it has in terms of program areas that are being duplicated or program areas in which the agencies should work harder to collaborate. For example, hydrogen has recently come into the limelight and biomass will have a tremendous role in its development.

David Garman said that there is still a lot of work to do on educating the general public about biomass. The results of a focus group recently completed by an environmental group interested in promoting renewable energy showed that the public is aware of wind, solar, and geothermal as already being sources of renewable energy, however the number of people who are aware of and understand biomass is small. However, the public does view abundantly available natural resources that are used close to their source, such as biomass, as being good. David Garman said that a lot of work still needs to be done in educating both Congress and the general public on biomass and the Board and the Committee should work together to move this forward. He said that the Board would begin this effort by promoting the work of the Committee and getting the Vision and Roadmap into the hands of the general public.

Glenn English thanked the Board Co-chairs for their comments. Glenn English stated that, in the time that he has served as Co-chair of the Committee, the breadth of experience and expertise of the Committee members have impressed him. He said that the Committee members believe deeply in biomass and he hopes that the Committee will be able to demonstrate that to the Board during the course of the meeting. He then opened the discussion to roundtable questions.

David Morris said that he did not see where the role is for the development of hydrogen from biomass in DOE's current budget. Biomass is the best net energy generator of hydrogen and the best short-term creator of hydrogen. Moreover, ethanol is a liquid carrier of hydrogen. Biomass can play an important role in the development of hydrogen but that role cannot be seen in DOE's budget. David Garman responded that, according to DOE studies, the cheapest near term source for hydrogen is natural gas, however biomass can play a more important role in the long-term. A

variety of possible routes to hydrogen need to be developed and DOE's Hydrogen program and Biomass program will be working closely together to develop those routes. However, according to a Wells to Wheels analysis, completed by the National Renewable Energy Laboratory, ethanol is a good hydrogen carrier in terms of ease of handling however it is not efficient. In the long term, the more promising solution for development of hydrogen from biomass is gasification of biomass to syngas and fractioning the hydrogen.

William Nicholson said that he would like to stress the importance of demonstration and its importance in the research and development process specifically in terms of the decision to close the black liquor gasification program at DOE. Few companies can afford the cost and risk that is associated with the development of a scale facility. Most small companies will not even bother investing in a plant until it reaches the third generation. Demonstration of black liquor gasification technologies is an integral step in the development of the technologies, however it cannot move forward without funding from the federal government. Kathie Olsen said that there is concern regarding the role of government in demonstrations. The federal government wants to ensure that it is not competing with industry but always wants to make sure that R&D is enabled. She said that it is always a debatable issue and she will take his views back to OSTP. David Garman said that there are spirited debates ongoing on this issue as the federal government tries to understand what its appropriate role is in demonstrations. The problem manifested itself in black liquor gasification however it will most likely occur again as hydrogen technologies move further along in their development.

William Carlson said that he would like to express the importance of the relationship between technology and policy. Natural gas prices are currently at a two-year high and, in ten years, the same thing could possibly happen to biomass unless the success of biomass technologies is underpinned by policy. A divergence of technology and policy can cause the progress of a technology to be wiped out and cause the industry to suffer. David Garman said that, in a Republican administration, the default position is to let the market make those allocations. However, sometimes the market cannot solve all problems and there are inherent benefits to public policy. It is never an easy decision to make and the administration will continue to struggle with it. John Howard, OFEE, said that the current Energy Bill, if passed, would address a number of public policy issues.

John Hickman asked what role the Board would like the Committee to play in assisting the agencies and in seeing the Vision and Roadmap carried out. David Garman said that the Board would like to see the Committee review the agency budgets and program information as closely as possible and report on how the agencies' programs sync with the Vision and Roadmap. The Board would also appreciate it if the Committee could look for duplication of activities, areas of coordination, and activities that are assigned to the wrong agency. He would love to see the Committee help the agencies make a better case to Congress and the Administration for support of biomass programs. Kathie Olsen said that the Board would also like the Committee to take the message to the public about why biomass is important and why the federal government and private industry are investing in it.

Michael Ladisch asked how the Committee can articulate the need to bring in students and train them for the biomass industry of the future. Douglas Faulkner, Principal Deputy Assistant

Secretary for Energy Efficiency and Renewable Energy, DOE, said that DOE has held discussions with representatives of the National Association of Land Grant Universities and Colleges to form a plan for encouraging students to go into biomass-relevant fields. Douglas Kaempf said that the Biomass Program is also developing an Education Initiative that will hopefully address this problem.

William Richards said all biomass is local and more needs to be done to support the nation's farmers and to address electricity interconnection issues. David Garman said that the Energy bill will address transmission and interconnection. Interconnection is a major area of contention that you do not hear much about, and it will continue to be a contentious issue because it creates safety and reliability problems for electric utilities.

Kim Kristoff asked how the agencies are moving forward to find training for federal procurement officers on purchasing biobased products. John Howard said that training is already being provided on Energy Star products and recyclables purchasing so it should not be difficult to transfer that into training for biobased products purchasing. David Garman said that his office has been trying to procure some biobased carpet and they have run into a number of barriers, but they are working to knock them down one at a time.

Edan Prabhu asked for information about what the federal government is doing in terms of waste to energy. Jean-Mari Peltier said that the EPA is extremely concerned about waste problems and has a number of programs that address the issue, such as AgStar, however there still needs to be a forum through which the issue can be brought to the forefront. EPA is considering creating an Advisory Committee for animal waste that would develop a Roadmap that identifies solutions to all the barriers. David Garman said that DOE needs to work with EPA to optimize using cleaner technologies to burn landfill gas and to recover a larger spectrum of gas.

David Morris said that issues of scale are not taken into account at the federal level. Federal policy should be examined from the perspective of community development and encourage local partnerships. David Garman said that EERE is an R&D shop and its purpose is to figure out how to bring down cost of technologies, which cannot always be done through small businesses. Mark Rey said that, historically, agencies have done a better job with supporting projects with large companies than with a large number of small companies.

William Carlson asked about the nation's overgrown forests and what effort is being put into using forest waste in biorefineries. Mark Rey said that DOE, USDA and DOI are currently developing a Memorandum of Agreement that addresses the issue of forest waste. However, there still is considerable opposition to get the effort started and it may not work. It has taken 85 years to create the forest mess that we have today and it will take awhile to create the infrastructure and an industry of contractors who can clean the forests.

Additional comments include:

- William Guyker said that he would like to see funding reinstated for co-firing because there are a number of technical issues that still need to be overcome.

- Terry Jaffoni said that the federal government is looking for growth in the biomass industry, however ethanol has had unprecedented growth (over 50% since 2001). The transition has been seamless and that can be applied to other biomass industries.
- Robert Boeding said that the Committee would like to offer their help in speaking with members of Congress to promote biomass and make sure that its budget stays strong. David Garman said that while DOE's budget for biomass is slightly down, mostly due to the closeout of black liquor gasification, the budget for EERE is up overall. Mark Rey said that USDA's biomass budget is up and that the overall federal portfolio for biomass is not down.
- Larry Walker said he would like to see more effort for collaboration across universities, national labs, state and local government, as indicated in Section 307 of the Biomass R&D Act. David Garman said that they are working with the National Association of Land Grant Universities on that issue but it is a two way street and the agencies need to see more of what the Land Grant Universities can do for the federal agencies.

### **Next Steps**

David Garman said that this meeting has been a great opportunity to present and describe the federal budget and let the Committee have at it. The Board would ask the Committee to review the information it has received and identify areas of collaboration, areas of duplication, and areas that may be assigned to the wrong agency. Areas that the Committee suggested for further exploration over the course of the joint meeting included:

- Robert Dorsch said that there is some catalysis work being carried out within DOE's Office of Science that might be better suited at NSF and asked the agencies to take a closer look at that area to see if it should be shifted or if it could be an area of collaboration.
- Bruce Hamilton said that an Education Initiative would be a great interagency activity.

David Garman cautioned the Committee that any recommendations that the Committee gives to the federal agencies need to be specific in nature as well as cautious of budgetary constraints. It would be helpful for the Committee to identify priorities and what funding recommendations at the current budget level as well as at increased and decreased levels. The agencies will do their best to meet the recommendations and achieve results.

Glenn English said that the Committee also needs to consider how to best influence not only the budget but also policy and in the most constructive manner. He commended the agencies for their actions to date and is encouraged by the Board's openness and willingness to work together with the Committee.

Meeting adjourned at 3:27pm.

## **ADDENDUM A**

### **Biomass Research and Development Technical Advisory Committee Meeting February 24-25, 2003**

#### **ATTENDEES**

##### **Committee Members Present**

Wayne Barrier	Terry Jaffoni
Thomas Binder	Kim Kristoff
Robert Boeding	Michael Ladisch
William Carlson	David Morris
Robert Dorsch	William Nicholson
Glenn English	Edan Prabhu
Thomas Ewing	William Richards
William Guyker	Philip Shane
John Hickman	Larry Walker
William Horan	John Wootten
Jack Huttner	Michael Yost

##### **Committee Members Not Present**

Roger Beachy	Brian Griffin
Dale Bryk	Patrick Gruber
Joseph Chapman	Gary Pearl
Carolyn Fritz	Holly Youngbear-Tibbetts
Charles Goodman	

##### **Representatives for Biomass R&D Board**

Pete Culp – DOI	Kathie Olsen – OSTP
David Garman – DOE	Jean-Mari Peltier – EPA
Bruce Hamilton – NSF	Mark Rey - USDA
John Howard – OFEE	

##### **Federal Employees Present**

Carmela Bailey - USDA	Douglas Kaempf – DOE
Merlin Bartz – USDA	Milicent Moore - TVA
Jeri Berc – USDA	Mike Pacheco - NREL
Angela Bruce - DOD	Martha Rollins - TVA
Ron Buckhalt - USDA	Helen Simpson - USDA
Mark Decot – DOE	Jim Spaeth - DOE
Marv Duncan - USDA	John Stierna - USDA



Don Erbach – USDA  
Douglas Faulkner – DOE  
Frank Flora – USDA  
Ann Hegnauer – DOE  
John Herrick – DOE  
John Houghton – DOE

John Stewart - DOI  
Bryce Stokes - USDA  
Donn Viviani – EPA  
Paul Werbos – NSF  
Gene Whitney – OSTP  
Daryl Williams – TVA  
Julie Winters – OFEE

Total Public Attendees – 15

Total Attendees – 71

Designated Federal Officer – John Ferrell

## **ADDENDUM B**

### **Biomass Research and Development Technical Advisory Committee Meeting February 24-25, 2003**

#### **Agenda**

##### **February 24, 2003**

- 8:00 – 8:30 Continental Breakfast
- 8:30 – 8:35 Welcome and Overview of Agenda
- 8:35 – 8:45 Welcome of New Members, Recap of Last Year’s Activities, and Objective of the Meeting
- 8:45 – 9:00 Round Table Self-Introduction of Committee Members
- 9:00 – 9:30 Presentation on Federal Advisory Committee Act Roles and Responsibilities and Committee Q&A
- 9:30 – 10:15 Overview of USDA FY03 and FY04 Biomass R&D Budgets and Portfolio  
USDA Presenter
- 10:15 – 10:35 Break
- 10:35 – 11:30 Overview of DOE FY03 and FY04 Biomass R&D Budgets and Portfolio
- 11:30 – 12:00 Overview of USDA/DOE Joint Solicitation
- 12:00 – 1:15 Committee Lunch – Crystal Room
- 1:15 – 2:00 Committee Perspectives on USDA/DOE R&D Portfolios and Joint Solicitation
- 2:00 – 2:15 Overview of Office of the Federal Environmental Executive Biomass activities for FY03 and FY04
- 2:15 – 2:45 Overview of Department of Interior Biomass R&D or other Activities for FY03 and FY04
- 2:45 – 3:00 Break
- 3:00 – 3:30 Overview of National Science Foundation Biomass R&D or other Activities for FY03 and FY04
- 3:30 – 3:45 Overview of Office of Science and Technology Policy Biomass activities for FY03 and FY04

- 3:45 – 4:15 Overview of Environmental Protection Agency Biomass R&D or other Activities for FY03 and FY04
- 4:15 – 6:00 Committee Discussion on Federal R&D Portfolios/Activities
- 6:00 Adjourn

**February 25, 2003**

- 8:00 – 8:30 Continental Breakfast
- 8:30 – 8:45 Review of Goals for the Day
- 8:45 – 10:45 Committee Discussion on USDA and DOE biomass R&D budgets to develop Recommendations for Interagency R&D Board  
 - Open Committee Discussion to prepare for joint afternoon meeting with R&D Board; R&D Board POCs will be available for follow-up Q&A  
 -
- 10:45 – 11:00 Break
- 11:00 – 12:00 Committee Discussion on its Desired Methods for Interacting w/the Interagency R&D Board, and Facilitating Interagency Consultations and Partnerships  
 - Open Committee Discussion to prepare for joint afternoon meeting with R&D Board; R&D Board POCs will be available for follow-up Q&A
- 12:00 – 12:15 Scheduled Public Comment  
 12:00 – 12:05 Millicent Moore, Tennessee Valley Authority, Acid Hydrolysis Program  
 12:05 – 12:10 Evan Hughes, Consultant on Biomass and Geothermal Energy
- 12:15 – 1:30 Committee Lunch – Crystal Room

**Joint Meeting of the Biomass R&D Technical Advisory Committee and the Interagency R&D Board**

- 1:30 – 1:40 Welcome by Glenn English and Thomas Ewing, Committee Co-chairs  
 - Roundtable Introductions  
 - Review of Recent TAC Activities and Day One Discussion
- 1:40 – 1:50 Remarks by Mark Rey and David Garman, Interagency R&D Board Co-chairs
- 1:50 – 2:50 Key Points from Committee Discussion on Federal Biomass R&D Portfolio followed by open Discussion between TAC and R&D Board
- 2:50 – 3:20 Key Points from Committee Discussion on Methods for Future Interaction followed by open Discussion between TAC and R&D Board
- 3:20 – 3:30 Next Steps
- 3:30 Adjourn