

Summary:

**Biomass Research & Development
Technical Advisory Committee
Meeting
April 13, 2006**

July 17, 2006

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Meeting Summary

A. Welcome and Overview of Agenda

Committee Chairman Thomas Ewing welcomed Committee members and introduced the first item on the agenda (Addendum B).

B. Update on USDA Activities

Bill Hagy from the USDA office of Rural Business-Cooperative Programs gave a presentation (Attachment A) regarding current Department activities. For 2007, USDA is responsible for the Biomass R&D joint solicitation. Transition of responsibility within USDA from the Natural Resource Conservation Service to Rural Development has been slower than expected. Of the joint solicitation projects awarded funding in 2005, only five have signed the grant agreement. The remaining projects have until the close of business on April 14, 2006 to send in a signed agreement. The final portfolio will total 41 awards and \$45 million. Some 2002 awards still have not been released.

Bill Hagy and his colleagues at USDA are working on tracking the entire portfolio, and the DOE Golden Field Office is helping with this effort. Mr. Hagy asked the Committee to participate and provide input regarding the benefits of the Biomass Initiative. All programs must undergo a Budget Office review for performance ratings.

The current joint solicitation goal is to issue the 2007 solicitation on October 1, 2006. USDA did contact the Golden Field Office regarding administration of the solicitation, but because Golden will not have sufficient time to devote to this effort, USDA may contract with a private consultant instead.

The Secretary of Agriculture has moved to organize an internal Energy Council. This group will examine possible coordination and seek to eliminate duplication among the many programs that support renewable energy efforts. New initiatives could be organized from this group. In addition, the Council will advise the Secretary on the revised Farm Bill. Subcommittees will report to the Department at their initial meeting on April 22, 2006 regarding a Council mission statement and charter.

Jim Martin noted that Mr. Hagy referred to renewable energy often in the presentation and asked whether wind and solar would be incorporated in the USDA Council. Mr. Hagy answered that the renewable energy umbrella would include wind, solar, biomass, and geothermal, but not hydropower efforts, according to the Farm Bill. Mr. Martin asked whether non-energy and non-fuel biobased products would be considered part of USDA renewable energy efforts if they represented petroleum displacement efforts. Mr. Hagy thought they would, but stated he would verify that assumption with the Department.

C. Update on Action Items from the Designated Federal Officer

Tom Ewing introduced Neil Rossmeissl, the Committee's Designated Federal Officer (DFO), from the Office of the Biomass Program (OBP). Neil gave a presentation regarding current Committee business (Attachment B).

Neil Rossmeissl explained that he has been working as DFO to replace the members whose terms expired in November 2005. A nomination memorandum package has been prepared and vetted, and is undergoing legal review. The Office of Government Ethics (OGE) requires conflict of interest screening for certain nominees whose work may overlap Committee discussions. Such members could be required to recuse themselves from those discussions. Chairman Ewing asked how many additional members would be added with this nomination package, and Mr. Rossmeissl answered that twelve new members have been nominated. However, there is not yet a co-chair nominee.

The annual report for FY 2005 defines Committee accomplishments under the Biomass R&D Act of 2000. A recent ruling has established a deadline of December 20 for each year's report. In order to facilitate the compilation of the document in time, the Committee will collect recommendations at each public meeting prior to the end of FY 2006. The FY 2005 report does not include any mention of the Energy Policy Act of 2005. In addition, a minority report submitted with the annual recommendations was neither discussed nor voted on, a situation which may require Committee review. The report is currently awaiting review by DOE Acting Assistant Secretary Douglas Faulkner, though Alexander Karsner will soon take over as Assistant Secretary, and as the Initiative point of contact at DOE.

Due to a certain number of proposals lost in the electronic submission system, the USDA-DOE Biomass R&D joint solicitation for 2006 has been delayed. Bill Hagy asked whether DOE has decided on a funding amount to contribute to the solicitation, and Mr. Rossmeissl responded that \$2 million has been allocated. Bill Hagy noted that \$12 million has been appropriated to USDA for the joint solicitation. There is \$1.4 million in carryover from previous years (subject to General Counsel approval), so USDA will contribute a total of \$13.4 million to this year's joint solicitation. Chairman Ewing asked whether DOE contributions to the joint solicitation will increase or decrease in future years. Mr. Rossmeissl stated that they are directed to stay the same, though the restrictions of EPAct may affect funding distribution. 2004 funds were allocated without reference to EPAct.

The Multi-Year Program Plan (MYPP) is under revision at OBP. Though nothing is included in the current version about the Biofuels Initiative, staff are working on analysis to provide information for the \$1.07 per gallon target price for cellulosic ethanol by 2012, as well as replacing thirty percent of today's gasoline usage (60 billion gallons) with cellulosic ethanol by 2030 (30 x '30). When the new MYPP is complete, the Committee will be asked to review and provide comments on certain sections.

The Committee has established three subcommittees, and it hopes to receive reports from each of them soon. Stemming from the Biofuels Initiative, OBP will develop a Posture Plan for all research platforms within the program and all activities within the platforms. OBP hopes to use the updated *Vision* and *Roadmap* to guide this work. Mr. Rossmeissl requested a working group structure at the OBP level to work with subcommittee chairs to complete tasks and report to the Committee.

John Hickman noted that the USDA Energy Council was a high-level group and asked whether OBP's group would be at a program technical level. Mr. Rossmeissl responded affirmatively. Dr. Hickman then noted that the Interagency Biomass R&D Board (Board), the USDA Energy Council, and the OBP working group will all be agency-level panels working on the same tasks. Mr. Rossmeissl explained that the Board is required by the Biomass Act, and that the Board and Committee interact to ensure recommendations are considered within the agencies. The OBP working group will support Committee work.

Jim Barber asked among how many projects the \$2 million of DOE joint solicitation funding is distributed. Mr. Rossmeissl stated that DOE asks a number of individual pre-proposal applicants in each technical area to provide full proposals for funding, but that recalcitrance is the only area DOE is allowed to fund. Dr. Barber asked whether there is a critical mass at which funding is actually effective, but Mr. Rossmeissl did not have an answer with regard to the joint solicitation. Eric Larson stated that USDA and DOE funds support the joint solicitation, not just the \$2 million. He asked how the proposals are reviewed. Mr. Rossmeissl explained that the Biomass Act requires the Committee to ensure the review process is entirely competitive, with independent reviewers. Those who administer the joint solicitation report to the Committee on the number of proposals received and the reviewer selection process. Dr. Larson asked whether the Committee is expected to comment on selections made. Mr. Rossmeissl stated that the information is presented to the Committee, but because the joint solicitation is a competitive procurement process, not all information, including the names of applicants and scoring data, can be disclosed. The Committee does receive information on the affiliation of reviewers and the type of proposals received and selected. Mr. Larson asked whether this year's awards would be announced in August, after the last Committee meeting of the fiscal year. Mr. Rossmeissl stated that last year, a closed meeting was held to announce to the Committee the names of awardees and the selection criteria used, before they provided annual recommendations on the process. Dr. Larson asked whether this meeting would be held happen if the awards were delayed and the Committee needed the information in its recommendation process. Mr. Rossmeissl said it would.

Bill Hagy asked whether the Committee has to vet the joint solicitation process before the Board does. Mr. Rossmeissl stated that the information is provided to the Board first. Mr. Hagy asked whether it is better to provide information earlier to facilitate Committee review. Mr. Rossmeissl agreed that after the joint solicitation is scheduled, delays in the review process are frustrating for all administrators and applicants. Larry Schaefer noted that EPAct authorized up to \$200 million for biomass research, and the Farm Bill \$14 million, but that the lack of appropriated funds could affect research plans. Mr. Rossmeissl agreed, and stated that funds are allocated from the DOE R&D portfolio to

cover gaps. Mr. Schaefer asked whether this amount was always about \$2 million. Mr. Rossmeissl stated that a different number has been requested for FY 2007. If feedstock research is also continued, the number could change again. Bill Hagy stated that \$14 million is available to USDA annually through 2007, per the Farm Bill. There is a carryover from prior years. Chairman Ewing stated that the Biomass Act originally included \$50 million in authorizations, but appropriations have never reached that amount. Mr. Rossmeissl agreed that there are similarly high authorization amounts in EPO. DOE was required to issue the biorefinery solicitation from section 932 of EPO within 180 days, but funds have not yet been appropriated for the project. Jim Barber asked about the status of the 932 biorefinery solicitation. Mr. Rossmeissl stated that the Funding Opportunity Announcement (FOA) was issued, and proposals are anticipated. Funding for the solicitation will be resolved after the appropriation budget is signed. Chairman Ewing asked whether the joint solicitation will be tied into the 932 biorefinery solicitation, but Mr. Rossmeissl answered that EPO prescriptions preclude a crossover. Chairman Ewing asked whether there is a chance that 932 solicitation activities will dovetail with joint solicitation proposals, and Mr. Rossmeissl agreed that both will include critical technology. Bill Hagy asked whether the 932 solicitation requires matching funds, and whether those could come from another Federal grant source. Mr. Rossmeissl stated that section 9008 of the Farm Bill cannot be used to match funds, but that the forty percent government match for the section 932 biorefinery solicitation projects is straight equity. Mr. Hagy asked whether the match can come from any source. Mr. Rossmeissl stated that the awardees automatically have forty percent equity in the plant, instead of using any loan guarantee program, because the government does not want to own the biorefinery.

D. Review of Central *Roadmap* Update Workshop

Committee Chairman Thomas Ewing introduced member Tom Binder, the *Vision and Roadmap* subcommittee chair, who conducted the Central *Roadmap* Update Workshop April 10-11, 2006. Dr. Binder stated that the last two days had been successful, with about thirty participants providing expertise from various backgrounds in discussions of the document. Mr. Binder gave a presentation regarding the outcomes of the Workshop (Attachment C).

Arthur Blazer asked what the numbers in parentheses after most bullet points on the slides indicated. Dr. Binder stated the numbers noted how many Workshop participants voted for that item as a priority. The data on each item will be compared with other Workshop outcomes and the *Roadmap* document itself to further prioritize updated sections.

Dr. Binder hoped that the new *Roadmap* would be representative not only of every industry that has input in biomass in the Central region, but also of coastal interests, including more forestry concerns, and East Coast chemical producers.

Scott Mason stated that public interest in food and feed supply effects should be reflected in analysis in the *Roadmap*. He asked how an oversupply of protein results from biomass

production. Dr. Binder stated that biodiesel production produces a glut of protein byproduct. Jim Martin elaborated that crushing a bushel of soybeans yields approximately 11 pounds of oil which can be used to produce 1.5 gallons of biodiesel. If producers increase the crush of soybeans to produce a billion gallons of biodiesel, as some have suggested, they have to crush an additional 666 million bushels of soybeans, which would result in 3.3 billion additional pounds or 150 million additional tons of soybean meal. Soybean meal is primarily used as animal feed and contains 48% protein by weight. At the same time, every gallon of ethanol produced from corn generates 6.6 pounds of Distillers Dry Grains with Solubles (DDGS), which contain approximately 25% protein by weight. If producers double dry mill ethanol production to 8 billion gallons, the additional 4 billion gallons would generate an additional 26 billion pounds or 13 million tons of DDGS, which could compete with soybean meal and other protein sources in the livestock feed market. The combined effect would be an additional 78 million tons of protein equivalent above current domestic utilization as feed and food. Unless alternative uses of these materials can be found the price of protein materials for livestock could collapse. Production of ethanol from sugar or cellulose does not produce a competing protein feed co-product. It is assumed that much of the co-product lignin from sugar or cellulosic ethanol will be burned to provide process energy, as is currently done with sugarcane bagasse in Brazil. The same could be done with DDGS with potentially good economics to provide more energy than is consumed by the fermentation and distillation process for ethanol and the dehydration of the spent stillage to create DDGS. A bushel of soybeans produces 1.5 gallons of biodiesel, and in addition, producing a gallon of grain ethanol results in 6.6 pounds of Dry Distiller's Grain (DDG) a byproduct of the process. This creates about four billion additional pounds of protein nationwide, or six billion if grain ethanol production were doubled.

Arthur Blazer asked how the Western Roadmap Workshop invitee list will be compiled. Tom Binder stated that Western chair Dr. Ralph Cavalieri will submit names and that Committee members are welcome to send him suggestions. Mr. Rossmeissl added that USDA and DOE also submit recommendations depending on invitee numbers and balance. Del Raymond noted that few forest products representatives were present at the Central Roadmap Workshop. Dr. Binder agreed that one representative out of thirty was from the forest industry. Dr. Raymond asked whether farmland could be used to produce woody crops and hoped that future coordination would be maximized. Dr. Binder noted that the woody crops issue had been discussed and agreed that energy crops must be highlighted in all discussions. Ed White agreed that biomass programs have been regionalized and the crop discussion supports these segmentations. To fulfill the goal of the *Billion-Ton Study*, however, all crops will be necessary. The 2006 meetings to establish regional feedstocks centers will certainly address these issues.

Tom Binder asserted that animal feed, agriculture, and food production will all change in the near-term. Mr. Rossmeissl agreed that all renewable energy and sustainable agriculture efforts need to be coordinated to facilitate the *Roadmap* and Biofuels Initiative goals. The Committee is uniquely positioned to address the issue. An updated *Roadmap* should convey the higher benefit in both alternative resource management and business practices.

Eric Larson asked whether conversion was discussed as much as feedstocks were. Tom Binder responded that discussion about conversion seemed to resolve that technologies could be immediately deployed. However, all agreed that grain ethanol is a good step towards cellulosic ethanol, and that the OBP Biofuels Initiative report on energy input and fuel output data is eagerly anticipated. Dr. Larson asked whether they had discussed co-firing biomass with fossil fuels to decrease suspicion of wholesale biomass generation. Dr. Binder said gasification had been discussed, but not specifically in tandem with fossil fuels, and that bioproducts and chemicals had received greater focus. He hoped for more attention to syngas in future discussions.

Del Raymond asked whether any major changes in forest products ownership were forthcoming. Some forest products companies still own and administer woody biomass land, but many major operators are selling land to investors, affecting the biomass audience. Mr. Rossmeissl stated that the shift may not have been externally recognized, and that USDA's undervaluing of forest products potential may have been a positive result. Dr. Raymond did not believe it was a good thing, and stated that material can be processed pre-shipping to lower costs.

Mr. Rossmeissl stated that workshop participants had also discussed production and distribution, including several transportation options and the current constraints of water and rail. Infrastructure may be more of a challenge than conversion due to the lack of Federal R&D.

Chairman Ewing announced the August 8-9, 2006 West Coast *Roadmap* Update Workshop and an Eastern Workshop to follow in the fall. He asked Dr. Binder when the Committee should expect a final report. Dr. Binder stated the updated *Roadmap* should be available by January 2007 and thanked BCS, Incorporated for their support and facilitation. Chairman Ewing also thanked BCS.

E. Public Comment

Chairman Ewing asked for public comment. There was none.

F. Indiana Biomass Policy and Efforts

The Chairman introduced invited speakers from the state of Indiana who gave a presentation (Attachment D) regarding state Agriculture and Energy Department initiatives involving biomass.

Brandon Seitz of the State of Indiana Office of Energy and Defense Development explained that his organization was a new creation under the administration of Governor Skillman, combining the traditional biofuels focus with development of other strategies. Neil Rossmeissl asked whether the state has ever considered a central processing facility

to pelletize stover feedstock instead of burning it. Mr. Seitz stated that the state uses separate grants for projects due to a lack of cutting-edge proposals, and that most Indiana funding is used for state-wide efforts, not single proposals. Bill Hagy asked whether there is a restriction on the source of grant funds, and Mr. Seitz said there is not. Mr. Hagy suggested working with USDA Rural Development to coordinate solicitations under section 9006 of the Farm Bill.

Ryan West, Program Manager for Bioenergy Development, explained that bioenergy is a major part of Indiana's strategic plan for agriculture growth. As part of the bioenergy effort, the BioTown USA project seeks to coordinate effective technologies to demonstrate biorenewable resources to meet the needs of an entire community.

Brandon Seitz discussed biopower, explaining that Indiana has large, low-cost coal resources. Utilities have expressed an interest in biomass use. Neil Rossmeissl asked whether Indiana would be interested in developing small-scale on-farm gasification appliances, based on their interest expressed during the *Roadmap* workshops. Mr. Seitz stated that much on-site incentive legislation has died in committee. Mr. Rossmeissl added that tax credits would help, but that commercial manufacture of small systems for farmers to use on-farm would create jobs. Mr. Seitz expressed interest in further discussion.

Chairman Ewing asked whether Indiana has nuclear power. Brandon Seitz answered it does not, but that some power is supplied from nuclear sources in Michigan. Chairman Ewing asked about a renewable energy facility being planned in northern Indiana. Mr. Seitz only knew about a Wolf Lake biodiesel plant. Neil Rossmeissl asked how the speakers defined clean coal. Mr. Seitz stated that incentives are provided for IGCC technology, which depends on the facility. In the Wabash valley, utilities run on a natural gas permit may not need an SER on IGCC, using petco coal. Eric Larson asked how CO₂ emissions will be accommodated in the long-term. Mr. Seitz stated IGCC carbon capture is very important for generators, and the state energy office is working with the Illinois geographical survey and the FutureGen project on carbon capture. Mr. Larson asked whether carbon capture is the goal for all utilities, and Mr. Seitz stated it is up to each company, as Indiana does not have a mandate.

Chairman Ewing said that Indiana will be in advance of other states by breaking new ground to move beyond coal dependence.

G. Review Status of Response to FY 2005 Recommendations and Finalize Procedure for Including Minority Reports

Committee Chairman Thomas Ewing explained that the FY 2005 Annual Report was complete when a Committee member found some differences and submitted a Minority report to the Chairman and Vice-Chairwoman. The two officials agreed to include the minority report in the final version of the full annual report submitted to the Secretaries. Chairman Ewing asked Committee members to consider a formal approval procedure for future submissions of this type and whether the FY 2005 annual report has yet reached

the Secretaries. Neil Rossmeissl responded that the report had reached point of contact (POC) Acting Assistant Secretary Douglas Faulkner for concurrence and explained that the POCs cannot make any changes to the Committee recommendations section. The minority report this year was also sent to the Secretaries before it was submitted to the Committee. Chairman Ewing asked if the submission letter was signed by an individual member and written on personal stationery. Neil Rossmeissl stated that it was. Chairman Ewing also asked whether the submission happened while Vice Chairwoman Terry Jaffoni was acting as Committee Chairwoman. Mr. Rossmeissl affirmed it had, but stated that Vice Chairwoman Jaffoni had no chance to review the document before it was sent to the Secretaries. Chairman Ewing then asked if the Departments of Agriculture and Energy were working on responses to Committee recommendations for FY 2005. Mr. Rossmeissl said that Acting Assistant Secretary Faulkner has been informed that the annual report includes a minority report, which was submitted after the previously announced comment period. This fact has been made clear to the dissenting individual. In addition, DOE has little to do with the topic of the minority report, which has been discussed by all involved. As a result of Committee discussions with USDA representatives, a biobased products purchasing rule was changed in March 2006, denoting an effective process.

Chairman Ewing explained that he and Vice Chair Jaffoni thought it would be most transparent to present all Committee opinions, including a dissenting recommendation, in the report. Mr. Rossmeissl added that the Committee has discussed the benefits of a set procedure for approval of future minority reports. Eric Larson agreed that a transparent approach is best, but stated that multiple minority reports could decrease the effectiveness of Committee recommendations. Tom Binder explained that some members had frustrations with how information was presented to the Committee, stating that minority reports should be submitted when the majority report is given. Jim Barber asked whether including a minority report indicates approval of its existence or its ideas. Chairman Ewing stated that Committee approval would contradict its being a minority report. He suggested that a percentage vote rule could restrict submission of minority reports. At this time, any report submitted will be included. Dr. Barber asked what the Committee voting requirement is, and Chairman Ewing stated it is a simple majority vote requirement. Arthur Blazer agreed that a protocol should be established and asked whether the Committee member truly did not have an opportunity to comment on the annual report. Neil Rossmeissl stated that the entire Committee agreed on the first minority report in 2001. Last year, all members were asked to provide recommendations ahead of the November 2005 meeting for vote during the meeting. The Committee member in question did not submit recommendations and was unable to attend. In Mr. Rossmeissl's opinion a minority report is not a bad thing, and as Committee business, it should be made public. Charles Kinoshita asked whether meetings allow for the majority report to be discussed in precise terms so that attendees could still comment on the minority report. Mr. Rossmeissl agreed that this would be possible, though in the recent case the minority report was not prepared in time.

Chairman Ewing asked for suggestions. Mr. Kinoshita stated that the informal policy currently in practice should continue but be formalized. Chairman Ewing asked for

confirmation that any minority report should be presented to the Committee. John Hickman started a motion, and Jim Barber seconded it. Scott Mason asked for clarification of whether the minority report was submitted too late to present to the full Committee and was thus included by the Chairman to prevent conflict. Chairman Ewing affirmed this. Mr. Mason suggested including language in the motion to exclude minority reports submitted after a certain deadline. Dr. Barber asked whether a schedule could be made for minority report submission as part of the FY 2006 annual report process. John Hickman stated that the deadline was assumed in the motion. Del Raymond suggested including minority reports that had not had time for approval only with a disclaimer statement. With no further discussion, Chairman Ewing called for a vote, and the Committee unanimously approved the motion. Chairman Ewing asked that the Committee be provided the schedule for approval in writing. Ken Green of BCS, Incorporated said the schedule would be included in an updated Work Plan. Ed White stated that he was in the audience for the November discussion of FY 2005 recommendations and that no discrepancies occurred. Chairman Ewing stated that the dissenting member was an engaged, helpful Committee member and that the minority ideas for FY 2005 were legitimately raised.

The Committee broke for lunch.

H. Update from the Subcommittees

Policy Subcommittee progress

Policy Subcommittee Chairman Jim Barber discussed their current work. Since the last Committee meeting, a framework document has been developed to identify and address existing gaps in policies related to *Vision* goals. The first draft of this document will be updated and sent for selective review. The full Committee will see the final document. Neil Rossmeissl asked whether Bob Dinneen from the Renewable Fuels Association (RFA) has been involved in the draft, and Dr. Barber said BCS, Incorporated was the lead. Ken Green of BCS, Incorporated stated that BCS uses the RFA website extensively and that staffers may want to discuss items with RFA further, while considering other policy papers. Ed White noted that at the *Roadmap* Workshop before the Committee meeting, a white paper was discussed, which may go to the Policy subcommittee for review. He welcomes such interactions. Dr. Binder agreed that this information could help the Policy subcommittee in its gap assessment. Ultimately, the subcommittee should help the Committee provide recommendations for policy improvements. Jim Martin asked when the new Farm Bill will be voted on. Bill Hagy stated the update could happen in 2007 or 2008 and asked what input the Committee has on that type of legislation. Jim Martin noted that experts and Committee members at the *Roadmap* workshop discussed using Conservation Reserve Program acres for energy crop cultivation and suggested that issue be brought to Congress. Neil Rossmeissl added that as DFO, he obtained a General Counsel ruling that the Committee could make recommendations directly to the House or Senate if the recommendation represents the opinion of the full Committee. The *Roadmap* group suggested several white papers from the Policy subcommittee. Jim Barber asked whether the subcommittee could count on having resources for that effort,

and Mr. Rossmeissl responded that the Analysis group would create enough response to do so. Chairman Thomas Ewing considered that, in light of his previous testimony to Congress on behalf of the Committee, the group could still have influence in that arena. Bill Hagy agreed that, should the USDA agree with Committee inputs, an invitation to testify or present findings to Congress might be forthcoming. Larry Schaefer stated that RFA would be happy to contribute as much as possible to any policy papers. The energy title of the Farm Bill has generated a lot of interest, and this interest has spurred a good inventory of previous biomass legislation. RFA plans to present this data to the agricultural community in a constructive way. In addition, the February 2006 report from the Congressional Research Service on Biomass and Energy Issues discussed existing legislation, and Mr. Schaefer offered to distribute that information to subcommittee members to help in identifying policy gaps. Chairman Tom Ewing expressed concern that a new Farm Bill would focus too much on appropriated funds. Neil Rossmeissl asked how USDA should collaborate with DOE on the Farm Bill. Bill Hagy stated that section 9006 of the 2002 Farm Bill authorizes biomass energy funding, but the appropriation has been blocked for the last few years due to competition with discretionary funds. Jim Barber stated that subcommittee recommendations will be very specific, detailing where money should come from, identifying gaps, and presenting policies as “something to consider.” Tom Binder asked how the World Trade Organization (WTO) will affect foreign policy in the future, with EU policies affecting U.S. agriculture. Chairman Ewing said one theory held that if the Doha round of WTO talks had been a success, then the Farm Bill hearings would have been delayed. The agriculture committee may now be feeling pressure to change its rules. Neil Rossmeissl stated that a problem would arise if the Policy subcommittee recommended changes for which funds were not appropriated. He would then be willing to propose analysis to show the impact of delays in biofuels technologies. For market-based biofuels viability analysis, there are two factors offsetting petroleum inputs: risk and policy. Rather than subsidies, a dedicated Federal funding source is necessary to lower perceived investment risk. In addition, without available funding, no policies will be implemented. Chairman Ewing agreed that government without funding cannot move forward. Neil Rossmeissl hoped that analysis data will be helpful in backing up these ideas. Chairman Ewing added that appropriators should examine funding sources and work towards maximum Federal biomass funding.

Analysis Subcommittee progress

Leslie Pezzullo of BCS, Incorporated introduced herself as the point of contact (POC) for the Analysis subcommittee. She gave a presentation (Attachment E) about current subcommittee work. At this time, subcommittee members are working on their second task. After receiving a list of analysis performed by the labs during the last ten years, Ms. Pezzullo is now working with members to prioritize the documents and select some for peer review. The main reason for this operation is to screen assumptions made in the documents for validity and report back about possible future work.

John Hickman stated that he has received the spreadsheet and intends to provide comments about his priorities. Leslie Pezzullo offered to provide links to all actual documents for review. Mr. Hickman responded that some documents on the list would

require heavy scrutiny. Eric Larson asked for a deadline for comments and proposed a subcommittee conference call before the next Committee meeting. Ms. Pezzullo stated she will work to schedule this call. Neil Rossmeissl suggested working on this project for one hour per month, to which subcommittee members and Ms. Pezzullo agreed.

I. Discussion of FY 2006 Recommendations to the Secretaries

Committee Chairman Thomas Ewing suggested reviewing previous years' recommendations as a reference when generating this year's recommendations. Neil Rossmeissl explained that Committee members have discussed collecting recommendations at all meetings throughout FY 2006, including the conference call scheduled for June 6, 2006. Mr. Ewing disputed this notion, stating the Committee has not previously made recommendations in that manner. Del Raymond asked if recommendations made from this point on were only for FY 2006. Mr. Rossmeissl responded that they were, and that any recommendations suggested in the meeting were not final, but rather documented as part of the summary for future decisions. Mr. Ewing recalled that the annual report to Congress for FY 2005, only recently provided to the Secretaries, was not submitted in a timely manner. Ken Green of BCS, Incorporated explained that the Committee members have been given previous years' recommendations as part of their reference materials to help recall which categories of technical advice the Committee uses. John Hickman asked the Committee to start accumulating ideas. Bill Hagy of USDA asked whether Departments have responded to previous recommendations from the Committee. Mr. Rossmeissl stated that the DFO must address any action items from Committee meetings and receive an agency response. Though some energy issues are less complicated at DOE than at USDA, the FY 2005 report does include cohesive responses to all recommendations, and the Departments take their roles seriously. In fact, Agencies appreciate reinforcement of their core research objectives and add value by assessing industry response to their research work.

Committee members compiled the following recommendations:

A. Recommendations regarding the distribution and use of Initiative funds

1. That the thermochemical platform receives continued funding support and those thermochemical technologies become an integral part of the Biofuels Initiative. (Raymond)
2. That the Biomass Program should pursue coordinated research with Fossil Energy work in gasification and carbon sequestration. (Larson)
3. That carbon sequestration research should include woody biomass feedstocks. (White)
4. That R&D in producing hydrocarbon fuels from multiple biomass feedstocks should be pursued. (Mason)

B. Recommendations on the solicitation and proposal review process

1. That the 2007 USDA-DOE joint solicitation be issued in a timely manner, by October 1, 2006. (Hickman)
2. That budgeted funding for the Initiative should be subject to fewer Congressionally-directed projects and provide a greater proportion of discretionary amounts to pursue projects that are measured by documented milestones. (Larson)

C. Overall recommendations to the Secretaries

1. That opportunities for workforce development and outreach in biomass sciences be pursued. (Kinoshita)
2. That incentives for biobased products be created. (Barber)
3. That Congress provides full funding for the integrated biorefinery solicitation under section 932 of EPAAct - FOA # DE-PS36-06GO96016. (Hickman)

Members also identified the following topics for future Committee discussions on recommendations:

- Areas on which the Biomass Program should focus to achieve its \$1.07/gallon cost target for cellulosic ethanol by 2012.
- Whether the 2006 joint solicitation selections are endorsed by the Committee. (Binder)
- Whether the information provided by the upcoming Biofuels Initiative (“30x30”) analysis report is endorsed by the Committee. (Binder)

Chairman Ewing asked that the recommendations made thus far be emailed to all Committee members for reference.

J. Discussion of 2006-2007 Meeting Dates

The Committee began discussion of future meeting dates, and after some deliberation agreed upon the following schedule:

June 6, 2006 – Administrative Conference Call

August 10, 2006 – Public Committee Meeting – Sacramento, California

November 28-29, 2006 – Public Committee Meeting – Board Meeting – Washington, DC

February 13-14, 2006 – Public Committee Meeting - Florida

K. Adjournment

Committee Chairman Thomas Ewing adjourned the meeting.

ADDENDUM A – ATTENDEES

Biomass Research and Development Technical Advisory Committee Meeting October 3-4, 2005

Committee Members Present

Jim Barber
Butch Blazer
Tom Ewing
John Hickman
Charles Kinoshita
Eric Larson
Jim Martin
Scott Mason
Del Raymond
Ed White

Interim (Non-Voting) Committee Members Present

Tom Binder

Committee Members Not Present

Jerrel Branson
Ralph Cavalieri
Bob Dinneen
Carolyn Fritz
Doug Hawkins
Jack Huttner
Terry Jaffoni
Larry Pearce

Federal Employees Present

William Hagy III - USDA
Neil Rossmeissl – DOE

Total Public Attendees – 8

Total Attendees – 20

Designated Federal Officer – Neil Rossmeissl

ADDENDUM B – AGENDA

Agenda **Public Meeting of the** **Biomass R&D Technical Advisory Committee** **April 13, 2006**

8:00 a.m. – 2:30 p.m.
Spring Hill Suites by Marriott
Route 66 Room
15 West 90 North Frontage Road
Burr Ridge, IL 60527

Description of subjects for this meeting:

- Receive update on collaboration with USDA
 - Review status of *Roadmap* update
 - Receive an update on the status of the FY 2006 joint solicitation
 - Meet with representatives from Chicago-area biomass interests
 - Review status of 2005 Annual Report
 - Finalize procedure for acceptance of a minority report
 - Discuss Analysis, Policy, and other subcommittee business
 - Discuss 2006 annual recommendations
 - Discuss 2006 and 2007 meeting schedule
-

April 13, 2006

- 8:00 – 8:30 Continental Breakfast
- 8:30 – 8:45 Welcome and Overview of Agenda – *Committee Chairman Thomas Ewing*
- 8:45 – 9:00 Update on Departmental Activities – *Bill Hagy III, Office of Rural Development, U.S. Department of Agriculture*
- 9:00 – 9:15 Update from the Designated Federal Officer - *Neil Rossmeissl, Office of the Biomass Program, U.S. Department of Energy*
- 9:15 – 10:15 Review of Chicago *Roadmap* Update Workshop - *Tom Binder, Archer Daniels-Midland Company, Roadmap Subcommittee Chairman*
- 10:15 – 10:30 Public Comment
- 10:30 – 10:45 Break

- 10:45 – 11:00 Update on the 2006 USDA – DOE Biomass Research and Development Joint Solicitation – *Neil Rossmeissl, Office of the Biomass Program, Department of Energy*
- 11:00 – 11:15 Discussion of the 2006 USDA – DOE Biomass Research and Development Joint Solicitation
- 11:15 – 11:45 Indiana Biomass Policy and Efforts – *Brandon Seitz, Manager, Energy Division, State of Indiana Office of Energy and Defense Development, and Ryan West, Program Manager, Bioenergy Development, Indiana State Department of Agriculture*
- 11:45 – 12:00 Discussion
- 12:00 – 1:00 Working Lunch: Review status of response to 2005 Annual Recommendations and Finalize Procedure for Including Minority Reports – *Committee Chairman Thomas Ewing*
- 1:00 – 1:30 Update from the Subcommittees
- 1:00 – 1:15 Policy Subcommittee progress
- 1:15 – 1:30 Analysis Subcommittee progress
- 1:30 – 1:45 Discussion
- 1:45 – 2:15 Discussion of 2006 Recommendations to the Secretaries
- 2:15 – 2:30 Discussion of 2006 - 2007 Meeting Dates
- 2:30 Adjourn

Attachment A



Committed to the future of rural communities



Committed to the future of rural communities

*BIOMASS R&D TECHNICAL ADVISORY
COMMITTEE
Public Meeting
Burr Ridge, Illinois
April 13, 2006*

*William F. Hagy III
Deputy Administrator
Business Programs
USDA/Rural Development*

Committed to the future of rural communities

USDA UPDATE

- *Section 9008 Transition Status*
- *NREL Study*
- *FY 2007 Solicitation*
- *USDA Energy Council*



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Section 9008 Transition

- *FY 2005 Awards*
- *May 1, 2006 transfer date*
- *Post Award Activities*
 - *41 Awards - \$45 Million*
 - *University of Nebraska Analysis*
 - *Disbursement of Grants*



Committed to the future of rural communities

National Renewable Energy Laboratory Study

Purpose: Development of Quantitative Metrics to Evaluate Effectiveness of Section 9008

Timeframe: September 2006



Committed to the future of rural communities

FY 2007 Solicitation Outline

- *Procurement of Contracting*
- *Preliminary Timeline*

USDA'S Energy Council

Purposes:

- *Oversight of implementation of President's National Energy Plan including EPA Act of 2005.*
- *Coordination of USDA Energy Related Programs.*
- *Review and evaluation of key policy and program decisions on energy matters.*
- *Development of Initiatives to transform and generate alternative energy sources.*
- *Assist and oversee continued implementation of Title IX of 2002 Farm Bill.*

- *Under Secretary Tom Dorr, Chair*

- *Co-Vice Chairs:*
 - *Keith Collins – Chief Economist*
 - *Mark Rey – Under Secretary for Natural Resources and Environment*

- *Ex-Officio Members:*
 - *DOE* - *DOC*
 - *EPA* - *DOI*
 - *DOT*



Committed to the future of rural communities

USDA Energy Council

(Continuation)

- *Subcommittees*

- *Research and Development*

- Chair: Ghassem Asrar – Deputy Administrator*

- Natural Resources and Sustainable Agricultural Systems*

- *Commercialization*

- Co-chairs: Chris Risbrudl – Forest Service*

- Bill Hagy – Rural Development*

- *Outreach*

- Chair: Al Johnson – Deputy Under Secretary Rural Development*



Committed to the future of rural communities

QUESTIONS

THE END

Attachment B

The Biomass R&D Technical Advisory Committee

Update on Action Items

April 13, 2006
Neil Rossmeissl

- Nominees were forwarded to POCs for consideration
- All sGe candidates were reviewed with GC for waivers

- Report has been finalized and was forwarded to concurrence chain
- Minority report was included
- Due to timing, only Biomass R&D Act was referenced
- Secretaries of Energy and Agriculture will provide final comments this month.

- 34 Pre-proposals were “found” in Grants.gov system on March 8.
- Lost pre-proposals were submitted “on-time” but not forwarded for review.
- Supplemental review plan was prepared and approved.
 - Same reviewers will review these “lost” pre-proposals
 - Meritorious applications will be included in full application phase
 - May Notification letters will be sent
 - Full Applications due June 16
 - Merit Review Meeting July 17
- Final Selections August 16

- Revised pre-applications not including 34 “lost” pre-applications
- 277 Pre-applications in 4 topic areas
 - 58 Feedstock Production
 - 53 Recalcitrance
 - 130 Product Diversification
 - 36 Analysis

- 18% of Pre-applicants were requested to send in full proposals
- Additional pre-applicants are expected due to the 24 additional proposals.
- Pre-proposal breakdown is expected to change from prior report. (EPACT)
 - 20% Feedstock Production (20%)
 - 25% Recalcitrance (45%)
 - 39% Production Diversification (30%)
 - 16% Analysis (5%)

- MYPP will be revised due to the “Initiative.”
- Committee will be asked to provide feedback.
- A summary of the new MYPP will be provided electronically as soon as possible.

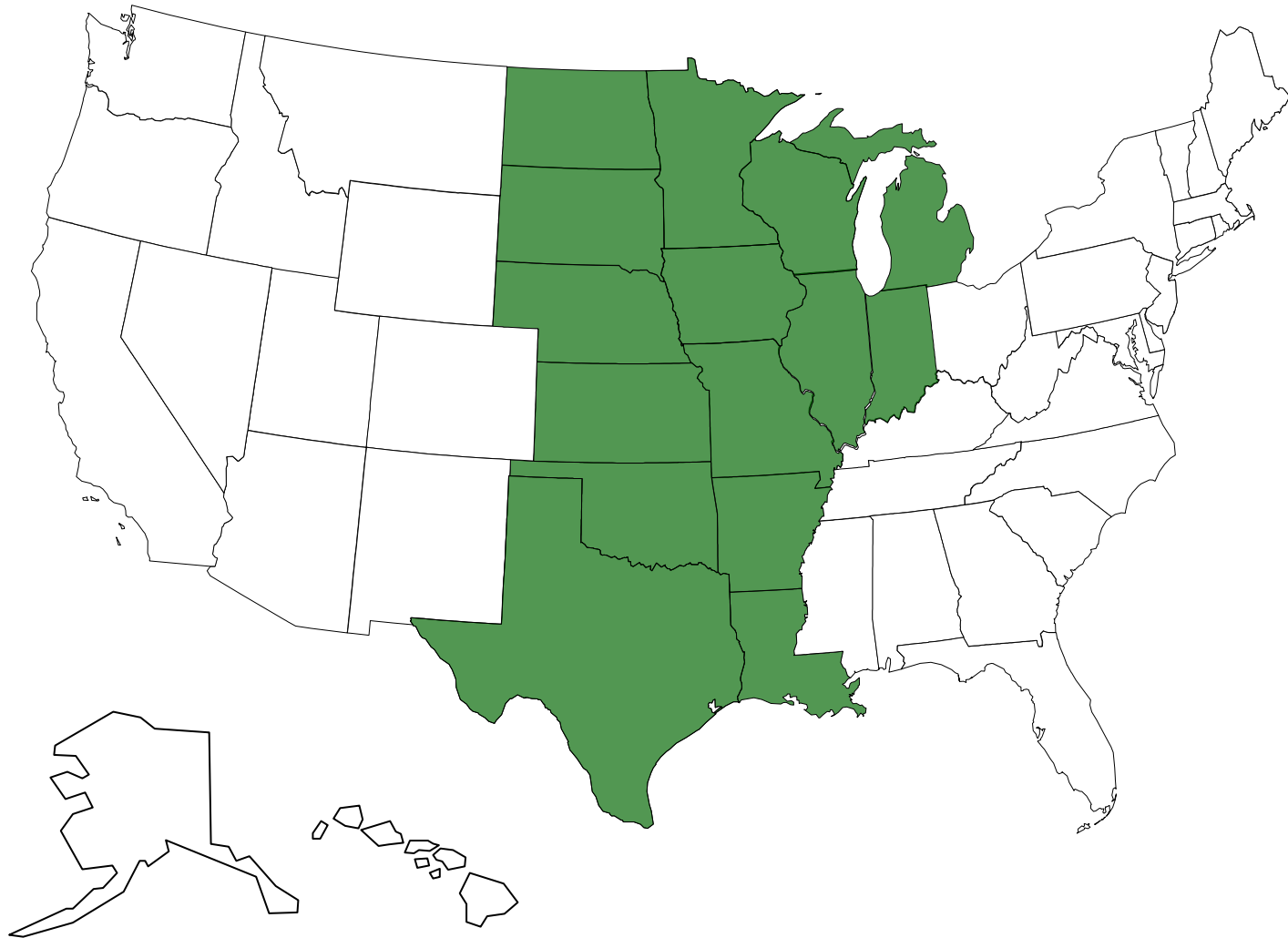
Attachment C



Summary:
Central Roadmap Workshop
April 11-12
Argonne National Laboratory

Tom Binder
Central Roadmap Chair

- *Central Roadmap; April 11-12*
 - *Chair: Tom Binder*
- **Western Roadmap; August 8-9**
 - **Chair: Ralph Cavalieri**
- **Eastern Roadmap; Fall 2006**
 - **Chair: Doug Hawkins**



- Original Roadmap is being included in pre-meeting materials and integrated; original roadmap structure being followed
- Meeting summary will follow each regional workshop for review by participants and the Committee.
- A focus team will be used to capture technical nuances of workshop.
- Final draft of the Roadmap is projected in January 2007.



Roadmap Participants

- Industry
 - Monsanto, ADM, Southern, 3M, Dow, cotton industry
- Universities
 - Iowa State, University of Illinois, University of Kansas
- Committee Members
- DOE/USDA

- Decentralization
 - Modular pretreatment, processing and fractionalization – “on farm methods to add value” (13)
- Farm Profitability
 - Reduce harvesting costs
 - Diversification, one-pass systems (14)
- Eco-system Services
- Increase Yield Per Acre Sustainably
- Feedstocks to Enable More Diverse Product Slate

- Increase Yields
- Oil, Sugars, and Protein Platforms
 - Economic analysis (modeling) of opportunities for oil and proteins to displace petrochemical and use to focus R&D; Understanding risks and trade-offs (21)
- New Approaches to Separations
- Analyze Processes found in Nature
 - Understanding fundamentals of biochemistry in nature; Ruminates process & breakdown (12)
 - Joint solicitation from NSF, NIH, DOE, USDA in “\$\$ billions” (8)

- **Transportation & Distribution Systems**
 - Multi-modal transport study to identify high opportunity modes
 - Quick-cheap densification
- **Certification and Specifications**
 - Bio industry needs to set the standards before another industry does
 - Incorporate whole-system certification that goes back to the feedstock
- **Procurement Requirements**
 - Need market pull and push
- **Increase Product Uses and Applications**
- **On-farm processes for producing methane**
 - Studies on scalability

- Education & Training
 - Lack of funding for basic science research
 - Training at all levels (for industry) (3)
- Public Outreach
 - White paper (specific funding in platform areas) (4)
- Reduce Uncertainties in the Investment Community
- Incentives
 - Long-term policies (5)
 - Petroleum displacement credits (5)
 - LCA (5)
- Coalition Building
- Regulation throughout the System

Attachment D

Indiana's Office of Energy and Defense Development

Indiana's State Department of Agriculture

Biomass Presentation to

The United States
Department of
Energy

- and -

The United States
Department of
Agriculture

Chicago, Illinois

13 April 2006

Brandon Seitz, Manager of the Energy Division

Ryan West, Program Manger of Bioenergy



GRANT PROGRAMS INVOLVING BIOMASS OPPORTUNITIES

Alternative Power and Energy
Grant Program

GRANT APE Grant : Projects

- Indiana State Department of Corrections switching 4 facilities to biomass boilers
- Capturing landfill methane gas to generate electricity- 22 MW currently with potential for 75 MW at remaining landfills
- Coal Mine Methane CHP Project- 4 MW with possible expansion to 10 MW
- 2 Biomass Boilers:
 - Wood Manufacturing
 - Soybean Processing

GRANT APE Grant

- In Fiscal Year 2006 – 2007 OED has allotted \$650,000 for the APE program
- Biomass is to be considered on the forefront of our agenda
- Awards will recognize 30% of the total project cost and will be in the amounts of:
 - \$50K for up to 1 Mw generation
 - \$100K for 1 – 5 Mw generation
 - \$250K for 5(+) Mw generation



- Located in Reynolds, Indiana
- Goal is to meet all the town’s energy needs through biorenewable sources
- 3 phase project
 - Use of E85 and B20
 - Use of waste to generate electricity
 - Use of waste to generate synthetic natural gas

BIOTOWN USA

Phase I : Alternative Fuels

- Install an E85 and B20 pump at a local filling station for public consumption
- Replaced the town's current vehicles with flex-fuel vehicles
- Partnered with General Motors to provide special incentives for the residents to purchase flex-fuel vehicles
- Near completion

BIOTOWN USA

Phase II : Electricity

- Transform agricultural and municipal wastes into electricity
- Involves research, development and implementation
- The logistics to make this a possibility exist in Reynolds and the surrounding areas:
 - More than 150,000 hogs in a 15 mile radius
 - Several sources of organic waste streams

BIOTOWN USA

Phase III : Natural Gas

- Production of synthetic natural gas from agricultural wastes and biomass
- Need to understand and identify a technological process that is the most efficient and economically
- Biotown can be the laboratory for studying biogas infrastructure and hone technology that will make biogas pipeline ready

- This project is the center piece of a great relationship between the Office of Energy and Defense Development and the Indiana State Department of Agriculture
- When Governor Daniels meets to discuss energy, OED and ISDA are always at the table together

LONG TERM VISION OF BIOMASS

25 x '25

Challenges

Opportunities

LONG TERM VISION

25 x '25

- In March, Governor Daniels spoke about this plan in Washington D.C.
- Governor Daniels supports this national initiative and is charging the ISDA and OED to find the best solutions to making this happen
- Indiana is looking to go from doing absolutely nothing in this arena to taking on the top players

LONG TERM VISION

Challenges

- Indiana's energy environment and its utilization of biomass is a "mixed blessing"
- Indiana has some of the lowest energy costs in the country
- Indiana has many biomass opportunities but lacks economic incentives to use them

LONG TERM VISION

Challenges : Regulation

- The regulation of our utilities and our availability of cheap abundant coal keeps rates low for our citizens
- But it hinders the economical feasibility of new biomass and bioenergy development
- Indiana has not supported mandates for alternative energy sources, but Governor as not ruled out incentives for alternative use
- We are working to forge positive relationships between our utilities and alternative power producers to utilize biomass

LONG TERM VISION Opportunities

- Despite these challenges, Indiana has the opportunity to be creative in its initiatives
- Governor Daniels ordered an Alternative Energy work group to study possible solutions and develop policy on renewable energy use
- Abundant biomass opportunities within virtually all 92 counties
- New coal will be expensive and new energy rates will be higher closing the gap with biomass

LONG TERM VISION

What Indiana will do

- Meet with Stakeholders including utilities, Farm Bureau, institutions of higher learning, and other carrying the banner for renewable energy
- Develop a solution per the request of Governor Daniels for Indiana to utilize alternative energy sources whether it be through tax credits or use standards

ALTERNATIVE ENERGY'S ROLE

New Coal Generation and Synthetic Natural
Gas

Preparing for the Future

Agricultural Impacts

ALTERNATIVE ENERGY'S ROLE

New Coal Generation

- One of Indiana's assets is coal and we intend to develop coal use in clean processes
- Indiana needs to be a leader in the usage of its indigenous sources for energy production: coal, grain, ag and industrial wastes
- Indiana needs 12,000 MW by 2025
 - 1 IGCC plant about 650 MW and 10 years to site, permit and build
 - Indiana suspects only 4500 MW will come from new coal

ALTERNATIVE ENERGY'S ROLE Preemption

- New coal technologies will raise the price of energy
- Consumers will be directly affected by this increase
- As the cost rises it will compete if not exceed the costs of biomass or other alternative derived energy
- Indiana is preparing now for this
- Indiana wants to have alternative sources for energy production ready and in place

ALTERNATIVE ENERGY'S ROLE

Environmental Impact

- Beyond the economics, the environmental impact also needs to be addressed
- Agriculture is vital to Indiana
 - Goal to double pork production
 - Biofuels initiative
 - Help mitigate non-tangible benefits such as odor reduction and neighbors perceptions
 - These projects will create waste streams
 - Currently, there is no way to predict the environmental regulations that will affect agricultural and farmers

ALTERNATIVE ENERGY'S ROLE

Agricultural Benefits

- Farmers and producers will have the opportunity to utilize a pollutant as a value added resource to produce energy
- Incorporate waste streams to produce energy and other biobased materials for fertilizers or green chemicals
- This is critical to Indiana's future

- Indiana is challenging its counties to undertake projects similar to the “BioTown USA” concept
- 3 prong idea to bringing needed energy resources
 - Large scale new coal facilities
 - Alternative energy sources
 - Conservation

Policy to enhance bioenergy

- Continue to work through the state legislature to find credits and incentives for more alternative energy production
- Work with our federal representatives, DOE, and USDA to maximize opportunities in Indiana
- Indiana is ready and willing participant for any new projects and test facilities for future bioenergy opportunities: biorefineries, cellulosic fuels, and biomass generation facilities

Attachment E

Analysis Subcommittee

April 13nd, 2006

Chicago, IL

- Ralph Cavaliere - Chairman
- Doug Hawkins
- John Hickman
- Eric Larson
- Charles Kinoshita
- Del Raymond
- Edwin White

Current Activities

- Review the Analysis Plan
 - Provide comments to Leslie and Neil
- Prioritize the list of analysis documents (for review)
 - Provide feedback to OBP on the prioritization of the analyses to be reviewed.

Planned Activities

- Review studies on an as-needed basis
- Support analysis needs of other subcommittees
- Identify out-dated assumptions that should be revisited
- Identify gaps in the existing analyses
- Participate where appropriate (to be defined on a personal basis) in the review of OBP analysis documents