

**Shenandoah Valley Poultry Litter to Energy Watershed & Air Advisory Group
Meeting Summary
March 28, 2011
Harrisonburg, Virginia**

Co-Advisors of the advisory group are Rick Weeks, Chief Deputy Director, Department of Environmental Quality and Russ Perkinson, Assistant Division Director for Nonpoint Source Programs, Department of Conservation and Recreation.

Advisory Group Members in Attendance:

- a. Katie Frazier - Agribusiness Council
- b. Don "Robin" Sullenberger - Shenandoah Valley Partnership
- c. Stephen Versen – Virginia Department of Agriculture and Consumer Services
- d. Jim Schaberl - Shenandoah National Park Service
- e. Cale Jaffe – Southern Environmental Law Center
- f. Laura Kellogg – Fibrowatt
- g. Kristen Hughes – Chesapeake Bay Foundation
- h. Mark Dubin - Chesapeake Bay Program
- i. Tony Banks – Virginia Farm Bureau
- j. Hobey Bauhan - Virginia Poultry Federation
- k. Tim Moore – Virginia Military Institute
- l. Jeff Kelble - Shenandoah Riverkeeper
- m. Salud Layton – Dominion
- n. Ken Newbold - James Madison University
- o. Jim Pease – Virginia Tech
- p. Mike Weaver – Virginia Contract Growers Association
- q. Dan Holmes – Piedmont Environmental Council

Meeting Facilitator was Angela M. Neilan, Community Involvement Specialist, VA DEQ
Note Takers were Gary Flory, VA DEQ, Allan Brockenbrough, VA DEQ, and Neil Zahradka, VA DEQ.

Rick Weeks explained that the purpose of the Advisory Group is to determine the scope of work for a study to determine the net environmental impact of a poultry litter to energy project in the Shenandoah Valley. The scope of work is not intended to address issues which would be addressed in zoning and permitting processes.

Russ Perkinson then explained to the group that manure-to-energy is a key part of the Chesapeake Bay TMDL Watershed Implementation Plan's approach to meeting 2025 nutrient reduction goals. He discussed how the Waste Solutions Forum was evaluating a variety of alternative uses of poultry litter and that scope of this study is moderate to large facilities. Russ Perkinson indicated that minutes from the last meeting of the Advisory Group were emailed to members of the group in addition to the draft scope of work dated March 23, 2011 entitled, "Evaluating Net Benefits/Impacts of a Shenandoah Valley Poultry Litter to Energy Power Plant on the Chesapeake Bay Watershed and Air Shed." This scope of work was prepared based on input from the Advisory Group's meeting on February 11, 2011. Ideas generated during that

meeting were broken into 5 main categories which are identified in the scope of work as major elements:

- I. Determining net nutrient load reduction levels to Chesapeake Bay – taking into account reductions from litter-to-energy system as well as potential new load from replacing land application with commercial fertilizer.
- II. Analyzing various waste by-product handling options to determine impact on Chesapeake Bay watershed.
- III. Analyzing and comparing costs of alternative solutions for nutrient reductions in the Shenandoah-Potomac watershed.
- IV. Analyzing effects from emission deposition on the Chesapeake Bay watershed.
- V. Analyzing effects from air emissions on Shenandoah National Park air quality and aquatic/biological resources.

Russ Perkinson explained that the scope of work would result in a Request for Proposal (RFP) which would likely be divided into elements to be completed by 2 or 3 separate universities.

Facilitator, Angela Neilan, following the desire of the advisory group, began the discussion by asking the advisors to identify general questions and issues about the draft scope of work:

Is the scope of work looking at a Fibrowatt project or are other centralized projects being considered?

Researchers need to understand the specific technology to conduct meaningful research.

By focusing on Fibrowatt other technologies might be overlooked.

Siting is critical to model air deposition.

Should consider other technologies and BACT analysis of each—use data from last 2 PSD permits.

Should acknowledge only commercially available technology.

Should include comparative merits of alternatives to central treatment systems.

Difficult to do cost benefit analysis without acknowledging limitations of scope of work.

Research should ground truth data to reflect reality.

Composting and pyrolysis projects are currently on-going.

Large scale projects offer cost advantages and efficiencies in treating emissions.

Is it realistic to complete the scope of work in 6 months?

Should include other technologies that are on the ground and could be scaled up.

Could there be priorities associated with additional work like alternatives?

Don't assume other technologies do not exist—let researchers find out.

Dominion has looked at other technologies—most others very small scale.

We need to prioritize and move on.

Should divide and concur between universities.

Focus on specific technologies and acknowledge others.

Fibrowatt in Minnesota is up and operational—we should use their emissions data.

Fibrowatt's will make its permitted and actual emissions data available.

Fibrowatt has new emission control technology designed for all new operations.

Chesapeake Bay model version 5.3.2 will be available by summer and should be used—includes attributes that will help with the study.

Should look at litter supply and transport issues.

Location is critical for air deposition.

Have the agencies decided to focus on a centralized facility vs. decentralized?

Agencies have picked the most feasible technology because of the time frame involved and the benefits of centralized waste product handling.

Should consider hearing dissenting opinions if others want to provide additional information on other technologies.

We can apply results of this study to new technologies as they develop.

Availability of litter is critical.

All technologies need subsidy. We should not unequally subsidize large over small facilities.

Will there be a process to determine consensus?

Combustion most cost effective technology. Fibrowatt has done studies and will share data. They support nutrient trading and believe small scale alternatives have a place in addition to a Fibrowatt project.

Virginia Contract Growers Association has contracted with a consultant to look at large-scale composting as an alternative in West Virginia.

After this general discussion, Angela Neilan asked the advisors to identify questions and issues about specific elements of the draft scope of work:

I. Determining net nutrient load reduction levels to Chesapeake Bay – taking into account reductions from litter-to-energy system as well as potential new load from replacing land application with commercial fertilizer.

Part IV should be moved into part I.

Is there interest in the co-products of combustion?

Fibrowatt plants are designed to operate with 85% poultry litter and 15% biomass including clean wood and agricultural residue.

Element name should be modified to include “if any” following “nutrient load reduction levels.”

Deposition analysis needs to be included in the equation.

Must address emissions occurring now from land application of litter including ammonia, PM 2.5 and greenhouse gasses.

Should look at emissions from Fibrowatt offsetting natural gas.

Hard to tell where offsets will occur.

Should look at replacement of nutrient sources.

A – E are crucial but not part of Element I.

Will biosolids replace litter?

No NMP is required for commercial fertilizer.

Pennsylvania looked at emissions from various sources for their trading program.

Will study rely on loading reductions from Chesapeake Bay model or actual ground reductions? Poultry industry disagrees with litter handling assumptions in the model. 15% loss assumption during storage a concern.

15% storage loss reduced to 4% with application of BMPs required by Virginia regulations.

2007 agricultural census data not accurate. The poultry industry is changing and contracting. Need better data on litter production. Pease and Ignosh have conducted additional studies.

How are evaluating economic impact? Broad vs. narrow evaluation?

Study will only evaluate agricultural economic impact.

Should title include “combustion/incineration” instead of “litter to energy”?

Litter production data should include Virginia permitting data not just census data.

Fibrowatt has conducted studies on emissions from the land application of poultry litter. Data should be included/reviewed.

Considerations should include availability and pricing of bedding, bio-security, and future petroleum prices.

Element I.B should focus on 2025 and not other dates.

II. Analyzing various waste by-product handling options to determine impact on Chesapeake Bay watershed.

Consider value-added product of ash—cinder blocks, fertilizer, etc.

Must include the public health issues including arsenic.

All of these issues are part of the air permit. Should not be necessary to conduct a full BACT analysis as part of the study, would be a duplication of effort.

Public health concerns have derailed other projects and cannot be overlooked.

Permitting is too late to address public health.

Should consider public health of the Shenandoah Valley and not only the Shenandoah National Park.

Public health is a valid concern but any plant must meet all public health guidelines.

Shenandoah National Park has a Class I air standard which is the most stringent. If we can meet this standard in the Park then we should meet the standards for the rest of the Valley.

Fate of by-products is important.

Should not duplicate permitting process. Should concentrate on nutrients.

Consider adding element VI for public health.

This scope of work should not look at BACT level analysis but should look at anything specific to Fibrowatt.

How will nutrient trading impact analysis?

Nutrient trading credits should go back to farmers.

Nutrient trading negates reductions.

III. Analyzing and comparing costs of alternative solutions for nutrient reductions in the Shenandoah-Potomac watershed.

Should compare all alternatives, not just those that require trucking.

Data exist for combustion, not other alternatives.

Should we remove III?

Litter production in Virginia and West Virginia is a minimum of 500,000 tons annually.

Plant can use >300,000 tons of litter per year.

Virginia needs to quantify excess litter.

Should expand III since transport of litter is a worst possible option. Others may be more cost effective.

Perdue pelletizing plant is an alternative.

Shenandoah Valley plant failed. Must consider competing markets.

Pelletizing analysis should be possible.

Need to look at how “excess” is defined.

Price determines what is excess.

Leaving III in the scope of work helps in Phase II WIP

IV. Analyzing effects from emission deposition on the Chesapeake Bay watershed.

Group offered no questions or comments.

V. Analyzing effects from air emissions on Shenandoah National Park air quality and aquatic/biological resources.

A – E methodology review by DEQ and Park Service to fit into permitting process.

pH impaired watersheds exist within the Shenandoah National Park. Project will exacerbate the problem. Acid deposition will increase and should be included in study.

Facilitator Angela Neilan asked the committee to identify any final issues:

The title should include combustion. MACT requirements define incineration vs. combustion.

Need to evaluate subsidies for Fibrowatt vs. subsidies for Best Management Practices (BMPs).

Need to understand siting for analysis.

Model could compare sites.

The floor was opened for Public Comment:

- a. J.D. Cave—a Page County Board of Supervisors member: Appreciated that the meeting was held in the Shenandoah Valley. Submitted a letter to Fibrowatt from Page County. Stated that Page County would not welcome Fibrowatt. Encourage citizens to discuss with their elected officials.
- b. Sam Cabbage—a Page County Citizen: Stated that the acceptable level of dioxin in the body is 0 and that the Fibrowatt stack will release dioxin. He expressed concerns about the availability of litter and that the group must focus on all alternatives. Health should be the number one priority.
- c. Al Weed—Public Policy Virginia: Suggests that we should focus on eliminating waste and consider other alternatives to large, centralized operations. Stated that large operations do not capture thermal energy, pose bio-security concerns and that long-term contracts will hamper smaller projects. Mr. Weed said that smaller units will come down in price in the future.
- d. Peter Thomas—a citizen from Charlottesville: said that emission data is available for gasification and that NRCS is in the process of developing a national standard for gasification. He wanted to know who was going to pay for the study.
- e. Anthony Beery—a dairy and poultry farmer from the Shenandoah Valley: wanted to know why the market couldn't decide if a Fibrowatt project was viable. He was also concerned about the perception that farmers who land apply litter are polluting—he does not believe that the perception is accurate. He believes that we should keep the focus of the study narrow.
- f. Lee McWhorter – a citizen from Page County: Objects to burning poultry litter as the combustion of litter releases dioxin. He is a Vietnam Veteran on disability for being exposed to Agent Orange. Public health is a major concern with the burning of the litter. He indicated that there might be a lawsuit if the project is approved.
- g. Erich Knight—a gardener and composter from the Shenandoah Valley: many other technologies exist and he doesn't want to limit farmers. Pyrolysis has no emissions. Biochar—the end product of pyrolysis—has many environmental benefits. For example, high phosphorus biochar can lock away dioxin and heavy metals.
- h. Kim Sandum—Preserve Rockingham: has concerns that valuable information will be missed if we do not consider all options. There is a perception that this study is a cover for one company.

Next Steps:

Russ Perkinson and Rick Weeks outlined the next steps for the study and advisory group. Based on the comments received at the meeting, agency staff will make revisions to the draft scope of

work which will be sent out for comments in approximately two weeks. After the scope of work is finalized a Request For Proposal (RFP) will be developed. Sources of funding for the study are still being identified. The next meeting of the Advisory Group will likely be held after the study has been completed.

The Advisory Group was thanked for their attendance and participation. The meeting was adjourned.