

## **Assessment of the Energy Training for Ag Professionals Project: SARE Project ES08-092**

**Al Kurki, September 24, 2010**

### **I. Summary**

The 26 agricultural professionals who participated in the Energy Training for Agriculture Professionals (ENTAP) training program raised their competency and knowledge level in 18 out of 19 energy efficiency and renewable energy topics. Within 10 months of the October 2009 training, 21 trainees used what they had learned (and the resources provided by the ENTAP project) to conduct 39 educational events that reached 1419 people. In addition, ENTAP course graduates reported that they directly assisted at least 81 farmers in incorporating renewable energy into their operations, improving their energy efficiency, or developing energy-related economic enterprises.

A large majority of course graduates stayed in touch with one another after the training to share information and collaborate in projects. They also extensively used the ENTAP project resources after the training event to increase their knowledge levels and to extend what they had learned.

Most extension educators stated they were supported by their supervisors and institutions in conducting their energy education and technical assistance with clients. Course graduates were very satisfied with the training design and content. They offered extensive suggestions for future training events if ENTAP project were replicated, or if more advanced workshops and webinars are offered in the future.

### **II. Introduction to the project**

Energy Training for Ag Professionals (ENTAP) was designed to provide Southern state extension educators education and training in a wide range of renewable energy and energy efficiency approaches that would be relevant to their clients. The project's main elements were:

- a) Extensive stakeholder involvement in design of the training program;
- b) Careful trainee selection process;
- c) A multi-day educational event held in North Carolina in October 2009;
- d) Ongoing support and interaction among the trainees and the NCAT and NCSU project staff in forms of periodic post –training event conference calls and a host of web-based and other electronic tools that trainees could access.

During the course of this report, I use the words “agriculture professionals,” “course graduates,” “trainees,” “extension educators,” and “extension agents” interchangeably. In every instance, these words refer to the 26 training event participants – 25 of whom had at least partial extension appointments. One participant was a staff person from the Federation for Southern Cooperatives.

### **III. Purpose, design and implementation of this evaluation**

My tasks as the internal evaluator for the Energy Training for Agriculture Professionals Project (ENTAP) were to:

- \* assess changes in learning and action on the part of trainees within this project;
- \* determine what changes might be made in future technical and information support provided to trainees; and
- \* determine how future professional development might be designed, based on the feedback from the ENTAP trainees.

I provided templates for the pre-and-post event trainees' surveys, designed an "eight-month interview/survey" of extension educators and offered suggestions on data collection methods during the course of the project. However, to ensure some distance from the project managers, I surveyed extension trainees as if I were a third party evaluator. I received and tabulated the survey results; the completed surveys were not shared with project managers to ensure respondents' anonymity and confidentiality. All the reported data was stripped of any references that might endanger that respondent anonymity.

I relied on three main data sources in conducting this project assessment. The first source was the results of the pre-and post-test surveys that were completed by all the grantees at the October workshop. The second source was the written summaries of the April 20, 2010 conference call where extension educators reported on what they had been doing with what they learned. The final data source was a 10-question e-mailed survey to all 26 trainees, 24 of whom completed the survey. The survey was first e-mailed to trainees in June 2010, eight months after the training event had taken place.

I provided a verbal survey results summary report to the project staff in a teleconference on August 11th. At that same time, I gathered more information on the project's design and development process and made suggestions for possible future work in this area.

It's worth noting here that the project's original evaluation plan suggested *interviews* of all trainees six months or so after the training. With this in mind, I designed an interview schedule that I could readily convert into a survey. During the April 20<sup>th</sup> conference call and in subsequent e-mail correspondence with the trainees, I told the trainees that I would be sending them a survey after the middle of May. If they did not complete the survey, they could expect a call from me to arrange an interview. I would also call them if I needed something clarified from their completed survey.

Twenty four of the 26 trainees completed the survey that was first e-mailed to them on June 8<sup>th</sup> – a very busy time of year for extension educators. Most trainees responded within three weeks with one e-mail reminder from me during that time. A handful completed the survey by late July. A copy of the survey questions and trainee responses is attached as Appendix I.

#### **IV. Literature search**

As part of my assessment of this project's impacts, I reviewed the available evaluation literature to ensure that I had applied sufficient rigor in data analysis and interpretation in developing the findings presented in this report. I also searched for comparable SARE-funded professional development projects on the same topic.

I examined the national SARE data base to see if there were any previously SARE-funded projects that trained extension educators on energy efficiency or renewable energy technology technologies. If there were, it could serve as a basis of comparing project design, outcomes and possibly effectiveness.

The one SARE –funded project that may have served as a basis for comparison (ENC07-097) did not precisely report its educational benchmarks or outcomes. Had this data been reported, the NCAT project could have been compared. The only other SARE PDP funded energy education project for ag professionals was just funded in 2010 in the Western region. Other SARE-funded projects that had an energy education component were geared for farmers and ranchers, not agriculture professionals.

## **V. Results: Did the ENTAP project meet its planned objectives?**

The project's behavior-based objectives are outlined below. The actual results (in *italics*) follow the stated objective and are then described in greater detail later in this report:

1. At least 25 agricultural educators will attend and complete an intensive three-day course of training and will be certified as Agricultural Energy Specialists. *25 extension educators and one Federation of Southern Co-operative staff person participated in the training.*
2. Course graduates will be able to refer producers to appropriate avenues of funding and technical assistance for their energy-related projects. *This objective was achieved in terms of what trainees learned and in what they reported doing eight months after the training.*
3. Course graduates will be able to conduct a basic farm energy audit. *Extension educators demonstrated a significant change in what they learned. What they practically applied was a far different story. While some agents did conduct energy audits or provided some training on audits, the very nature of whole farm energy audits probably exceed the time that extension educators could budget for such work.*
4. Course graduates will understand and be able to implement strategies for sustainable biofuel crop production, including reducing soil and water-related impacts. *This objective may not have been met, as the measured change in learning was the least significant of all 19 ENTAP training topics. Trainees arrived with a high level of knowledge in this area relative to all other topics.*
5. Course graduates will stay in touch with each other and will provide mentoring and mutual support, as members of a continuing network of Agricultural Energy Specialists. *This was indeed the case but information exchange was their most frequently cited reason for staying in touch.*
6. Course graduates will be supported by their supervisors and offices, enabling them to deliver energy training and technical assistance to agricultural producers and other state and local professional colleagues. *A large majority of extension educators reported that they had strong support from both their supervisors and institutions for their work on farm energy issues.*
7. By the end of this two-year project, course graduates will be involved in organizing at least 15 local or regional energy training events. *As of 8/31/10, 21 educators reported conducting 39 educational events that reached 1419 people.*
8. By the end of this two-year project, course graduates will assist at least 75 farms within the Southern SARE region in incorporating renewable energy into their operations, improving their energy efficiency, and developing energy-related economic enterprises. *Course graduates reported directly assisting at least 81 farmers, but the nature of that contact has varied considerably, ranging from workshops to direct farm visits and facility energy audits.*

**What did the trainees learn: Increasing knowledge and skill level**

Extension educators who participated in the workshops completed pre-and-post event surveys at the October training. Trainees rated their knowledge levels on 19 different topics. The full pre-post survey topics and results are attached (Appendix II, see scores tab).

Trainees appear to have learned the most about:

- 1) How to advise clients who are considering small-scale wind projects;
- 2) Energy audits,
- 3) Photovoltaics (solar electric power)
- 4) Wind energy potential for the Southern states.
- 5) Utility scale bio-power – possible opportunities for landowners

The topics in which trainees, as a group, were most competent by workshop's end were:

- 1) Technical assistance sources for energy projects
- 2) Networking and resources for career advancement,
- 3) Photovoltaics,
- 4) Solar hot water technology
- 5) Wind energy potential for the South.

There were significant gains in learning in all but one topic – energy crops suitable for Southern states. According to the pre-event surveys, participants came to the training with more knowledge on this subject when compared than any other topic that was presented at this event. 14 of 26 rated their pre-event knowledge in the 3-5 range on a scale of 1 (low) to 5 (highest).

**How useful was the training to the participants, in whole and in parts?**

At the October event, trainees rated the sessions on solar, wind, biofuels and biomass the most useful, in that order. It's noteworthy that almost a quarter of the trainees (6) said "all sessions were useful." That response was the third highest, tied with biofuels. No session drew more than eight "most useful" votes.

If trainees were all over the map with what sessions and speakers they found the most useful, they were more concise about what they found least useful. Of twenty sessions/speakers listed, only one session – Climate Change, Sustainability and Public Policy -- drew four votes, with 14 other sessions getting zero or one vote, and six votes cast for the choice "no session was not useful."

In the trainee survey conducted eight months after the event, respondents were asked to rate what was useful about the event as whole, certain sessions and support materials. They rated "meeting other participants and networking at the meeting" as the most useful, followed very closely by the support materials provided by NCAT – the flash drive with handouts and articles, and the educational materials at the ENTAP web site. Specific sessions at the workshop received mixed ratings, but majority of trainees found the ENTAP list serve as the least useful part of the whole training and technical support package.

Survey respondents reiterated that they liked and valued the training format and contents. More than 60 percent of respondents either strongly or somewhat agreed that the workshop was fine as is – no changes needed. They strongly opposed to decreasing the number or topics covered and shortening the training by one day. 80 percent of respondents wanted the training extended by one more day. They strongly opposed reducing the training event content or length.

Trainees did favor more hands-on training at the training event and the use of webinars to expand their knowledge beyond what could be offered during the face-to-face event. Adding more required reading for the training event received far more support from respondents than did adding more exams or homework assignments.

### **Changes in action: What did trainees do with what they learned?**

In the eight month survey, every trainee cited at least one activity for which they stayed in touch with workshop participants. Information exchange was far and away the most frequent reason, followed by collaborating on energy projects, mutual support, collaborating on grant applications and mentoring, in that order.

At least 75 percent of the survey respondents visited the ATTRA farm energy or ENTAP website in the eight months following the training. Over half followed up by phone or e-mail with one or more of the workshop speakers. At least half used the NCAT Directory of Energy Alternatives or downloaded materials from the ENTAP website. Table 1 shows what trainees did to build their knowledge and skill levels after the October training.

Table 1. Knowledge and skill-building steps taken by extension educators after training (n=24)

Frequency	Action step
<u>19</u>	Visited the Farm Energy area of the ATTRA web site
<u>18</u>	Visited the “For Participants Only” area of the ENTAP web site ( <a href="http://www.entap.org">www.entap.org</a> )
<u>15</u>	Followed up by phone or e-mail with one or more speakers from the training
<u>14</u>	Used the Directory of Energy Alternatives on the ATTRA web site
<u>13</u>	Downloaded materials FROM the ENTAP website
<u>11</u>	Joined one of the eXtension energy-related Communities of Practice
<u>8</u>	Contacted your state’s energy coordinator at USDA Rural Development
<u>5</u>	Sent a message to the ENTAP list serve
<u>5</u>	Contacted any utilities (If so, please explain)
<u>4</u>	Uploaded materials TO the ENTAP website
<u>1</u>	Listed an organization or individual in the Directory of Energy Alternatives (other than yourself)

In terms of new work with constituents, 20 respondents (83 percent) said they referred clients to sources of energy related technical assistance. 17 said they delivered energy training to agriculture producers. Over half said they referred clients to sources of funding for their energy related projects, such as USDA's Rural Energy for America Program (REAP).

Table 2: Actions trainees took with clients within eight months after the training (n=24)

Frequency	Action taken with clients
<u>20</u>	Referred clients to sources of energy-related technical assistance
<u>17</u>	Delivered energy training to agriculture producers
<u>14</u>	Referred clients to sources of funding for their energy-related projects
<u>12</u>	Raised awareness of the USDA Rural Energy for America Program (REAP) in your area
<u>10</u>	Delivered energy training to professional colleagues
<u>9</u>	Delivered energy training to youth
<u>9</u>	Promoted sustainable biofuel crop production practices
<u>3</u>	Conducted energy audits for clients
<u>3</u>	Pursued specialized skill training or certification for yourself
<u>3</u>	Assisted with preparation of a REAP grant proposal

### What is the context of Southern state extension educators' work on energy issues?

To get some sense of the level of institutional support that the trainees had when they returned home, trainees were asked two questions in the eight month survey. 87 percent of the respondents said their *supervisors* were supportive of their work on energy issues. Nearly three quarters of respondents said their *institutions* were supportive of their energy work. However, 45 percent strongly or somewhat agreed that there were obstacles or barriers to conducting energy-related programming in their states.

Trainees were also asked if receiving an energy training certificate had any value in their own promotion or career advancement. Over 50 percent (12) of respondents said yes, while four said no, and seven said they didn't know yet.

## VI. Recommendations

a) *Future training audiences*: Based on the feedback provided by these trainees, most would be interested in furthering their knowledge in certain energy topics. This group could become a ready audience for more advanced webinars or face-to-face trainings. Certainly NCAT could consider conducting a similar training for the 20 or more extension educators and land grant based faculty who were NOT selected for this round of ENTAP training.

Expanding this training to other agriculture professionals such as NRCS, USDA Rural Development or FSA staff would require a design team from those agencies. The October 2010 training event agenda could serve as a starting point for designing these audiences' energy information needs.

*b) Future training topics:* With direction provided by the project advisory committee, NCAT very nearly got the topics mix and approaches just about right. However, based on comments of a plurality of trainees, NCAT should include at least one session on both ethanol production and biomass. NCAT should use the extensive comments made by trainees in any tweaking of the ENTAP agenda should it hold comparable events in the future.

*c) Ongoing support beyond the training event:* Given how useful trainees found both the flash drive of materials and the ENTAP web site, NCAT should consider using those products in future trainings. Based on how little the ENTAP list serve was used by trainees, NCAT should check with its future trainees to see if a list serve is worth setting up at all.

### **Literature:**

Lam, Tony C. March 2009. Do Self Assessments Work to Determine Workshop Success? American Journal of Evaluation. Volume 30: 93-105 Sage Publishing, Thousand Oaks, CA. (Lam argues that self –assessments need to be paired with tests, exams or other forms of additional post-event feedback from workshop participants to ensure that a workshop’s impact on learning can be reliably measured.)

Ottoson, Judith and Hawe, Penelope, editors. 2009. Knowledge Utilization, Diffusion, Implementation, Transfer and Translation: Implications for Evaluation. New Directions for Evaluation, number 124. Jossey –Bass and the American Evaluation Association, San Francisco, CA.

Wholey, Joseph S., et al, editors. 2004. Handbook of Practical Program Evaluation. Jossey-Bass, San Francisco, CA.

### **Some of the written comments by ENTAP trainees about:**

#### **The impact of the project and training event:**

\*ENTAP enable and instate networking opportunity between the faculty of both land grants.

\*Before the program, [I] often felt isolated and constantly searching and starting from square one. ENTAP packaged a network of opportunity.

\* I am able to plan an energy training with more options for energy alternatives. Before the training, I did not know as much about energy alternatives...

#### **Actions they reported taking after the training:**

\* I conducted four Rural Energy for America programs for poultry and dairy producers as well business owners.

\* I developed and energy section for the Alcorn University Small Farmers Conference March 29-31, 2010. Have been collaborating with the Federation of Southern Cooperatives about energy training for three states.

- \* I provided technical assistance to 60 farmers producing dedicated energy crops for biofuel.
- \* A total of 300 people attended biodiesel demonstrations at two conferences that I assisted with planning.
- \* Contacted an electric utility in Tishomingo Coutny for a client that to find out local regs on wind mills and solar cells...

**The October 2009 training event itself:**

- \* Some sessions did not provide adequate time for Q&A.
- \*The workshop was most useful for me as an eye-opener to the ways through which I can work with cooperative extension on sustainable energy.

**Future professional development in energy efficiency and renewable energy:**

- \*... a webinar would be a great addition – any info on tools for irrigation management.
- \* Would like an advanced or refresher workshop.
- \* There should be some course work on bioethanol (even if it is not hands on).
- \*Have some specialized breakouts since some energy alternatives are [not] viable in all areas of the state.
- \* I would like to see another 2-3 day follow-up with more in depth training to build on the basics.



**Appendix: Participant Responses**  
**August, 2010**

**1) Since the fall 2009 training, have you stayed in touch with other participants for: (Check all that apply)**

3 mentoring, 8 mutual support, 18 information exchange, 9 collaborating on energy projects,  
4 collaborating on grant applications, 4 other (Please explain.)

**Comments/explanations appear on spreadsheet**

**2) Since the fall 2009 training, have you: (Check all that apply)**

17 Delivered energy training to agriculture producers (workshops, tours, other educational events)  
10 Delivered energy training to professional colleagues  
9 Delivered energy training to youth (e.g. K-12 or 4H)  
20 Referred clients to sources of energy-related technical assistance  
14 Referred clients to sources of funding for their energy-related projects  
9 Promoted sustainable biofuel crop production practices (If so, please explain.)  
3 Conducted energy audits for clients (If so, please explain.)  
3 Pursued specialized skill training or certification for yourself. (If so, please explain.)

**Comments/explanations on spreadsheet**

**3) Since the fall 2009 training, have you: (Check all that apply)**

15 Followed up by phone or e-mail with one or more speakers from the training  
19 Visited the Farm Energy area of the ATTRA web site  
14 Used the Directory of Energy Alternatives on the ATTRA web site  
1 Listed an organization or individual in the Directory of Energy Alternatives (other than yourself)  
18 Visited the "For Participants Only" area of the ENTAP web site ([www.entap.org](http://www.entap.org))  
13 Downloaded materials FROM the ENTAP website  
4 Uploaded materials TO the ENTAP website  
5 Sent a message to the ENTAP list serve  
11 Joined one of the eXtension energy-related Communities of Practice  
8 Contacted your state's energy coordinator at USDA Rural Development  
12 Raised awareness of the USDA Rural Energy for America Program (REAP) in your area  
3 Assisted with preparation of a REAP grant proposal  
5 Contacted any utilities (If so, please explain.)

**Comments/explanations on the spreadsheet**

4) What are you able to do now that you were not able to do before the fall 2009 training: See spreadsheet

5) Please describe any energy-related technical assistance you have provided to clients since the fall 2009 training: See spreadsheet .

6) Please share any success stories from the community and the people you serve: See spreadsheet.

7) How useful have you found the following parts of the training? (Mark your response to each item.)

	<i>Very Useful</i>	<i>Somewhat Useful</i>	<i>Slightly useful</i>	<i>Not Useful</i>	<i>Not applicable</i>
Meeting other participants and networking	15	7	1		
Hands-on biodiesel training	9	8	5	1	
Field trip to Craven Wood Energy	5	6			11
Tour of energy projects at Cherry Research Farm	8	9	2		3
The flash drive with handouts and articles	16	4	1		1
Educational materials at the ENTAP website	12	5	2		
The ENTAP listserve	4	13	1		2

**Comments/explanations on spreadsheet**

8) What best describes the level of institutional support for your work on energy issues?

	<i>Strongly Agree</i>	<i>Somewhat Agree</i>	<i>Somewhat Disagree</i>	<i>Strongly Disagree</i>
My supervisors are supportive of my work on energy issues.	20	2	1	
My organization is supportive of my work on energy issues.	16	3	1	1
There are obstacles or barriers to conducting energy-related programming in my state.	3	6	6	5

**Comments/explanations on spreadsheet**

9) Does receiving a certificate for this training have any value to you in terms of you own promotion or career advancement? Yes 12, No 4, Don't know yet 7

**Comments on spreadsheet**

**10) If this training is repeated, it should:**

	<b><i>Strongly Agree</i></b>	<b><i>Somewhat Agree</i></b>	<b><i>Somewhat Disagree</i></b>	<b><i>Strongly Disagree</i></b>
Have more exams	0	8	9	4
Have homework assignments	1	9	9	3
Have required reading	3	14	4	2
Cover fewer topics	1	1	11	8
Be extended at least one more day	7	10	4	0
Be shortened to a 1-2 day training	0	2	9	11
Include more web-based training (such as webinars)	6	12	3	0
Include more hands-on training	11	9	1	0
No changes – the training was fine as is	2	10	5	2

**Other suggestions on spreadsheet**

**Any closing comments? See spreadsheet.**

Please circle the number that most accurately reflects what you know about the following topics. Scale from 1 (I know nothing) to 5 (I know a lot).

PRE-TRAINING	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26	AVG
1. How to make biodiesel: equipment, safety, cost, and disposal	3	2	5	3	3	2	2	1	2	1	2	1	3	3	3	3	3	1	3.5	1	2	3	1	2	3	1	2.29
2. How to advise clients who are considering a biodiesel-related business enterprise.	3	1	4	2	4	2	3	2	1	1	1	1	3	3	2	3	3	1	3	1	2	3	2	1	2	1	2.12
3. Potential soil and water impacts from biofuel crop production	3	2	2	2	2	2	3	3	1	1	2	5	3	3	4	3	3	3	3	1	1	3	1	1	1	2	2.31
4. What types of renewable energy projects are succeeding best on small farms	3	2	2	3	3	2	3	3	1	1	2	5	3	4	3	2	4	2	3	1	2	2	2	2	2	1	2.42
5. Where and how to get technical assistance for energy projects	3	2	3	2	3	2	2	3	1	1	3	4	2	4	4	2	4	2		2	1	2	2	2	3	1	2.40
6. How to get grants, loans, rebates, and tax incentives for energy projects	2	2	3	2	3	1	2	2	1	1	2	1	2	4	4	3	4	1	4	1	1	4	2	1	2	1	2.15
7. How to get energy-related networking and mentoring for my own career advancement	2	2	3	2	3	2	3	2	2	2	2	2	3	4	4	2	3	2	3	2	2	2	1	1	2	1	2.27
8. Highly cost-effective energy-saving measures that really work for farms	2	1	2	2	2	1		3	1	1	2	2	2	4	3	2	4	2	3	1	2	2	1	1	3	2	2.04
9. Farm energy audits: what they are, how to get them, what they accomplish	2	1	2	2	2	1	3	2	1	1	1	1	1	3	2	3	4	2	2	1	1	2	1	1	1	2	1.73
10. How to work with utilities on renewable energy and energy efficiency projects	1	1	2	2	2	1	2	2	1	1	1	1	2	3	2	1	2	2	2	1	1	1	1	2	3	1	1.58
11. Photovoltaics: how it works, ballpark economics, agricultural uses	1	1	3	3	2	1	3	3	1	1	1	2	2	4	3	2	3	2	1	2	2	2	2	1	3	2	2.04
12. Solar water-heating: how it works, ballpark economics, agricultural uses	2	1	3	2	3	1	3	3	1	2	2	1	2	4	4	2	3	2	3	2	2	3	2	1	2	2	2.23
13. Anaerobic digesters: how they work, ballpark economics, maintaining and managing them	1	1	3	3	2	1	3	4	1	2	1	2	2	4	4	4	2	2	2	1	1	3	2	2	1	1	2.12
14. Utility-scale biopower: how it works, opportunities for landowners	1	1	2	2	2		2	2	1	1	1	1	1	3	2	2	2	1	2	2	1	2	1	3	3	1	1.68
15. Most promising "energy crops" in my home state: what can be grown and who will buy it?	3	1	3	2	4		3	2	3	4	1	5	4	4	2	2	3	2	4	2	1	3	2	3	3	2	2.72
16. Current and pending public policies and legislation encouraging bioenergy development	2	1	3	2	3		2	2	2	2	1	2	3	3	2	4	3	2	3	1	1	3	1	3	3	2	2.24
17. How to advise clients who are considering a small-scale wind project: siting, economics, etc.	2	1	2	2	3		2	2	1	1	1	1	3	4	2	2	2	2	2	2	1	1	1	1	1	1	1.72
18. How to advise clients who are negotiating leases with large-scale wind developers	2	1	2	2	3		3	1	1	1	1	1	3	3	1	1	2	1	2	2	1	1	1	1	1	2	1.60
19. Wind energy potential in the Southern states: barriers and opportunities	2	1	2	2	3		3	2	2	1	1	1	4	3	3	2	2	2	1	2	1	2	1	1	3	2	1.96
	2.11	1.32	2.68	2.21	2.74	1.46	2.61	2.32	1.32	1.37	1.47	2.05	2.53	3.53	2.84	2.37	2.95	1.79	2.58	1.47	1.37	2.32	1.42	1.58	2.21	1.47	2.10

NOTE: Evaluations were anonymous. The person identified as #1 in the pre-training evaluation (above) is probably different from person identified as #1 in the post-training evaluation (below).

POST-TRAINING	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20	#21	#22	#23	#24	#25	#26	#27	Change		
1. How to make biodiesel: equipment, safety, cost, and disposal	5	5	4	4	3	3	4	3	3	4	3	5	4	3	5	5	4	4	4	4	4	5	4	4	4	4	3	3.96	1.67	
2. How to advise clients who are considering a biodiesel-related business enterprise.	5	5	2	4	3	3	4	3	3	4	4	5	4	4	3	4	5	4	4	4	4	5	3	4	4	4	4	3.89	1.77	
3. Potential soil and water impacts from biofuel crop production	4	3	2	5	3	4	4	3	3	4	4	4	4	4	4	4	5	4	4	5	4	4	5	4	5	3	3	3.85	1.54	
4. What types of renewable energy projects are succeeding best on small farms	5	5	3	4	4	3	3	3	3	4	4	4	4	4	3	5	5	4	4	4	3	4	3	3	4	3	4	3	3.74	1.32
5. Where and how to get technical assistance for energy projects	5	5	3		5	4	5	3	4	4	5	5	4	4	5	5	5	4	4	3	4	4	5	4	5	4	4	4.31	1.91	
6. How to get grants, loans, rebates, and tax incentives for energy projects	5	5	3	4	4	4	3	3	3	4	4	5	4	3	4	4	5	4	4	4	3	4	2	4	4	4	4	3.85	1.70	
7. How to get energy-related networking and mentoring for my own career advancement	5	5	4	5	5	4	5	3	3	4	4	4	4	4	4	5	5	4	5	3	3	5	4	4	4	3	3	4.11	1.84	
8. Highly cost-effective energy-saving measures that really work for farms	5	3	3	4	4	4	4	3	3	4	4	4	5	4	5	5	5	4	4	3	4	3	4	4	5	4	3	3.96	1.92	
9. Farm energy audits: what they are, how to get them, what they accomplish	5	3	3	4	4	4	4	3	3	3	4	4	5	4	4	5	4	3	4	4	4	4	4	4	4	4	3	3.85	2.12	
10. How to work with utilities on renewable energy and energy efficiency projects	5	3	3	4	4	3	3	4	3	4	4	3	4	4	4	4	4	3	4	2	3	3	2	4	4	4	3	3.52	1.94	
11. Photovoltaics: how it works, ballpark economics, agricultural uses	5	3	4	4	4	4	5	4	3	4	5	4	4	4	4	5	5	5	4	4	4	4	4	3	4	5	3	4	4.11	2.07
12. Solar water-heating: how it works, ballpark economics, agricultural uses	5	3	3	5	4	4	5	3	3	4	4	4	4	4	4	5	5	5	4	4	4	4	2	4	5	4	4	4.04	1.81	
13. Anaerobic digesters: how they work, ballpark economics, maintaining and managing them	5	3	5	5	3	3	4	3	3	3	4	4	3	3	4	4	4	4	4	4	4	3	4	4	3	3	3	3.67	1.55	
14. Utility-scale biopower: how it works, opportunities for landowners	5	5	3	4	4	4	3.5	3	3	4	4	4	5	3	4	5	4	3	3	3	4	3	3	4	4	3	3	3.72	2.04	
15. Most promising "energy crops" in my home state: what can be grown and who will buy it?	4	5	3	5	3	4	3	3	3	3	3	5	5	3	5	4	5	3	4	2	3	3	5	4	4	4	2	3.70	0.98	
16. Current and pending public policies and legislation encouraging bioenergy development	5	3	4	4	4	4	3	3	3	4	5	4	4	3	4	4	4	3	4	4	4	3	4	4	4	3	3	3.74	1.50	
17. How to advise clients who are considering a small-scale wind project: siting, economics, etc.	5	5	4	4	5	4	4	3	3	3	4	4	4	4	4	5	5	4	4	4	3	4	3	4	4	3	4	3.96	2.24	
18. How to advise clients who are negotiating leases with large-scale wind developers	5	4	3	4	5	4	3	3	3	3	4	3	4	4	3	5	5	3	3	3	3	4	2	4	4	3	3	3.59	1.99	
19. Wind energy potential in the Southern states: barriers and opportunities	5	4	3	4	5	4	4	3	3	3	4	4	5	4	4	5	5	4	4	4	3	4	4	4	5	3	4	4.00	2.04	
Average	4.89	4.00	3.26	4.28	4.00	3.74	3.87	3.11	3.05	3.68	4.05	4.16	4.21	3.63	4.26	4.63	4.58	3.74	3.95	3.47	3.63	3.79	3.47	4.00	4.21	3.53	3.32	3.87	1.79	
How would you rate the training overall? (scale from 1 to 5)	5	5	4	5	5	4	4	5	5	5		5	5		5	5	5	4	5	4	4	5		5	5	4	4	4.67		

***What session(s) did you find the most useful?***

[illegible]

*What session(s) did you find the least useful?*

[illegible]

***Because of what I learned at this workshop, I plan to: (Check all apply)***

[illegible]

***If there are follow-up webinars, what topic(s) would you like to see covered in greater depth?***

1. Ethanol, bioenergy crops (production, economics, species & varieties)
2. I would participate in them all. I know I will learn something.
3. I think a little more on the basics of the AD process. I know there is not much of that in use, but the background would be useful since there is discussion on this topic. I would also suggest a seminar on the tax credits, what they are, how they work, who is eligible, etc.
4. Wind and biofuels
5. Updates on tax incentives @ state and national level. Public policy updates in general. Any updates on new solar and wind technologies.
6. Biofuel crops and solar.
7. Bioenergy crops for bioethanol production.
8. Energy audits. Anaerobic digesters. How to get loans, grants, rebates for energy projects.
9. Continue updates on RPS, interconnection, & net-metering progress in states, updates on incentives for renewables. Evolving solar efficiencies.
10. Biomass
11. PV and biomass
12. Biopower and cellulosic fuel development
13. IN-DEPTH of each of major alt. energy: biofuel, solar, wind.
14. Biopower, CHP
15. Update on government programs, tax credits for all renewables.
16. Concentrate more on smaller scale projects.
17. Project ideas for grants for renewable energy. Updates on laws & regulations. Farm-based success stories.
18. - Highlight straight costs of systems w/o incentives (kWh etc.) and fossil w/o embedded incent.
  - Extension's niche in bioenergy (general info and "farm-scale systems" < 1 MW.
  - Discussions on identifying snake oil salesmen
  - Extension's role in providing info & decision making tools vs. policy advocacy.
19. Farm energy audits, state-specific sessions on policy issues, upcoming potential incentives.
20. What works for farmers.
21. Use of pine as biodiesel
22. More on methane digestion - economics, challenges, policy. More on design of systems.
23. Biomass and solar.

***Other comments***

1. Thanks for the opportunity!!!!
  2. This was an all-around great training and I would like to thank you for the opportunity to broaden my view and knowledge of these renewable energy technologies.
  3. This is one of the best trainings I have ever attended. Thank you so very much for organizing, seeking funding, and presenting the training.
  4. Overall, a very useful workshop. I would like to see another 2-3 day follow-up with more in-depth training to build on the basics we got at this one.
- Thanks for the work and the opportunity. Great job!!! P.S. Simon Rich was outstanding, very interesting, well thought-out, and balanced.

5. Great training! Learned a bunch of interesting information. Appreciate the hospitality!
6. Very worthwhile training.
7. We need more time to network.
8. Great hospitality, great choice of speakers, liked hands-on activities.
9. Would be willing to request and promote a hands-on session (1-2 day) just devoted to: \* wood-fired utility power generation, \* ethanol fuel production (farm -> commercial), \* solar heating installation/farm applications, PV installation.
10. This was an outstanding training! You have given us plenty of motivation, ideas, & resources to make a good program back home. Food & hospitality also wonderful. Hope to see this group again!
11. Thank you for sponsoring this program. There is a great need for this type of info for extension and this program, and the formed network of professionals, provide excellent tools toward this goal. Thank you for the opportunity to participate.
12. Well done. Excellent info & speakers. Appreciate hands-on learning and efficient manner conference was managed.
13. Well done! Thanks.
14. Super, opportunity for Extension. Good hotel & food. Thanks to all.
15. Add another day and shorten the length of training each day.
16. I had little basic knowledge of all the topics and I feel like I am walking away with a lot more knowledge than I came in with. Everything was great.
17. Biofuels: Not likely to be adopted by my growers, but it was good to learn its complexities.
18. The hands-on sessions developed confidence.
19. Glossed over biodiesel disposal. This is a BIG issue for small producers.
20. There are clear renewable energy opportunities in NC due to the RPS. What about other locations? REAP alone doesn't change the cash flow problem.
21. Would be good to provide a "Top 5" list of energy-saving measures (BMPs) for different farms: dairies, greenhouse, poultry, etc.
22. On energy audits, I appreciated the honesty regarding disconnect between REAP energy audit and implementation. Look forward to the NCAT report.
23. On anaerobic digesters, it would be interesting to highlight "feasibility thresholds" for conventional systems and discuss options for smaller farms. Most conventional AD systems are >\$1 million and only fit large CAFOs. Technology needs to be modified for smaller operations.
24. Not convinced that a market exists (yet) for dedicated energy crops. For [illegible] yes, but not switchgrass, miscanthus, poplar, etc.
25. Some sessions did not provide adequate time for open Q&A. Side conversations clarify things, but Extension benefits when Q&A is done with the group.