

**NYSERDA Residential
Emerging Technology and Accelerated Commercialization (ETAC)
Advisory Committee Meeting
June 8, 2012
1:00pm-4:00pm
NYSERDA Board Room
Albany, NY**

Attended In Person:

- Cliff Babson, Four Points Energy Solutions
- Jeff Irish, Hudson Valley Clean Energy
- Robert Olson
- Hal Smith, Halco
- Jeremy Snyder, LRC
- Janet Joseph, NYSERDA
- Karen Hamilton, NYSERDA RES
- Peter Douglas, NYSERDA R&D
- James Quirk, NYSERDA RES
- Joe Borowiec NYSERDA R&D
- Peggie Neville, NYSERDA RES
- Chris Coll, NYSERDA RES
- Paula Rosenberg, NYSERDA
- Mishel Filisha, NYSERDA RES

Attended via Conference Call:

- Rick Bain, CREE
- Mike Dunleavy, RECAP
- Damian Hodgkinson, True Energy Solutions
- Ryan Kerr, Gas Technology Institute
- Rupert Sheodial, Catskill Mountain Home Builder, Inc.
- Kevin Stack, NE Green Building Consulting
- Rebecca Wingenroth, EPRI

Attended via Video Conference:

- Maureen Mahle, Steven Winter Associates
- Lee Butler, NYSERDA

Materials distributed prior to the meeting:

- 1) Meeting Agenda (PDF)
- 2) NYSERDA Residential ETAC Advisory Committee Meeting (.ppt/PDF)

I. Welcome & Introductions

Chris Coll welcomed everyone and began the meeting by suggesting everyone in attendance provide an introduction. Meeting attendees introduced themselves.

Karen Hamilton thanked everyone for their time and provided an overview of the Residential Emerging Technology and Accelerated Commercialization (ETAC) program. While the New York State Energy Research and Development Authority (NYSERDA) began as a research and development organization, it has expanded over time deploying a range of energy efficiency and renewable energy programming. The ETAC program bridges the gap between research and development and full-scale program deployment.

ETAC will support large scale demonstrations of proven technologies that have not yet achieved significant market penetration for any of a variety of reasons, with the goal of encouraging more widespread use of these technologies. This initiative is a five year commitment across NYSERDA's departments, with initiatives in the small residential, multifamily, and commercial/industrial sectors. The focus of this Advisory Committee and today's meeting is on the residential sector.

The objective of the Advisory Committee is to provide consultation on finding the right technologies, identifying market barriers, getting the demonstrations coordinated, and most importantly facilitating technology transfer by encouraging wide scale use of selected technologies. NYSERDA is looking to the Advisory Committee for help in terms of implementation, evaluation, and growth.

II. Overview of the ETAC Initiative

Jim Quirk began by providing an overview of the ETAC initiative in the residential sector by referencing the PowerPoint presentation. Jim noted that the concepts that will be discussed were a result of preliminary planning activities by NYSERDA staff. NYSERDA is seeking feedback from the Advisory Committee on the initial plans.

A. Components

The residential ETAC program is a component of NYSERDA's Technology and Market Development program. ETAC is motivated by the fact that opportunities to increase energy efficiency in the residential sector are limited by the underutilization of technologies and practices that are commercially available, but face barriers to wide scale adoption.

The focus of the program will be on commercially available, underutilized technologies and products and emerging technologies that have been proven. In some cases, infrastructure (distribution, sales, training and certifications, awareness) may need development. These technologies work, have proven benefits, and have wide scale viability. In all cases, there are benefits to widespread, large scale demonstrations.

B. Process

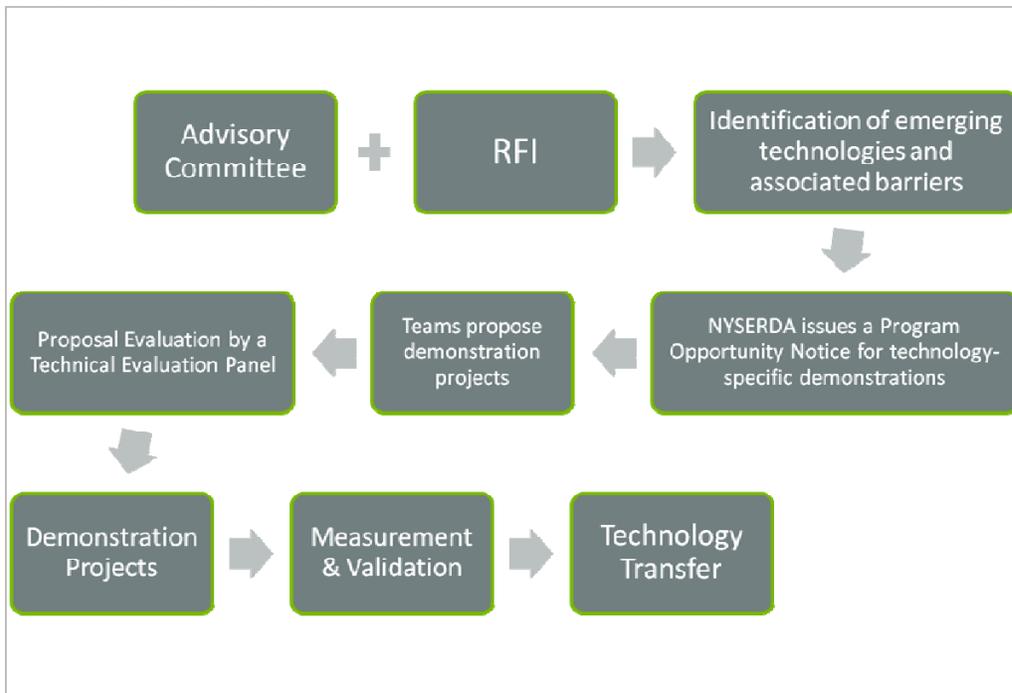
The implementation of the residential ETAC initiative involves the following:

- Stakeholder input
- Pool of demonstration participants
- Design of initiatives
- Program Opportunity Notice
- Proposal evaluation
- Demonstrations, data collection
- Identification and development of infrastructure initiatives
- Technology transfer

A major part of the initiative will be facilitating technology demonstrations. Demonstration teams will put together proposals based on Program Opportunity Notice (PON) requirements. The proposed demonstration process will include data collection designed to report on how the technology is doing, how much money the products are saving, etc. Additionally, proposers should be seeking to identify and develop infrastructure initiatives. A plan for technology transfer will also be a requirement of the proposals.

The following discussion refers to Slide 5 of the PowerPoint presentation, which provides an overview of the residential ETAC process:

Residential ETAC Process



- This afternoon's meeting is represented in step one: consultation with the Advisory Committee. NYSERDA will rely on the Advisory Committee to provide valuable information on the development of the initiative including identifying appropriate technologies. Feedback from the committee will be combined with a Request for Information (RFI), which NYSERDA will issue later this summer. The RFI will seek input on the identification of emerging technologies from a broader group.
- The combined input will help identify the emerging technologies and associated barriers that the residential ETAC initiative will target. Through the contributions of the Advisory Committee, NYSERDA will identify the technologies that have the most promise.
- Next, a Program Opportunity Notice (PON) for technology-specific demonstrations will be issued. The PON will provide criteria and available funding for demonstration projects. The first PON will focus on lighting and will be issued during the summer of 2012. Subsequent PONs will target technologies that are identified through the Advisory Committee and RFI process.
- Responders to the PONs will propose demonstration projects that promote comprehensiveness and team building.
- A Technical Evaluation Panel (TEP) comprised of external and internal parties will be convened, to evaluate which proposals are most fundable. If there are a lot of

technologies or products to select from, it will be narrowed down to those with potential for the most impact.

- Contracts will be awarded by NYSERDA and demonstrations will be implemented.
- Measurement and validation will be undertaken.
- The results of the demonstration projects will be communicated to the public via technology transfer initiatives, which may include case studies, webinars, presentations at conferences, and press releases. Technology transfer will be led by NYSERDA, but will require contributions from the demonstration teams.

III. Overview of the Advisory Committee

Chris Coll provided an overview of the ETAC Advisory Committee. NYSERDA intended to represent the various stakeholders involved in the residential energy field through the composition of the Advisory Committee. NYSERDA is seeking suggestions for stakeholder groups in the residential energy sector that are not already represented. The Advisory Committee should be as inclusive as possible.

A. Roles & Responsibilities

Advisory Committee members will provide NYSERDA with input and guidance in the development of the ETAC initiative. The role of the Advisory Committee will be strictly consultative, the committee will not have any decision making capacity. NYSERDA staff will make program decisions based on advice of this Committee.

The Advisory Committee as a whole will not be evaluating any proposals. A TEP to review the proposals will be made up of a different group of people. It is possible some members of the Advisory Council (those who would not be proposers or have other conflict of interest) may be invited to participate on TEPs.

All Advisory Committee activities and discussions will be made public. Future meetings will be recorded on digital video and posted to the internet.

B. Eligibility to participate in demonstration projects

Advisory Committee members are eligible to submit proposals for technology demonstration projects through the PONs.. Being on the Advisory Committee does not exclude you from submitting proposals through the PONs. The objective of making all Advisory Committee activities publically available is to ensure there will be no competitive advantages for committee members.

IV. Identifying Appropriate Technologies and Practices for Demonstrations

NYSERDA staff provided a preliminary definition of an emerging technology and opened the meeting up for feedback from the Advisory Committee members and discussion amongst the group.

A. Defining an emerging technology

An emerging technology is a commercially available technology with a proven strategy for energy efficiency. The products associated with an emerging technology are tested, licensed, code compliant, and exceed minimum standards for energy efficiency. Performance data on the technology should already be available. There should be pre-existing analysis and

measurement/validation of the technology that provide a better understanding of performance or reduce barriers to better performance. Thorough tracking of costs and benefits should be in place.

Advisory Committee Discussion:

Question: What if benefits have been tracked in a commercial arena rather than the residential arena? Would that qualify for residential sector?

Response: If the data proves that the technology works, yes.

Comment: In order to get market attention, energy efficiency technologies need marketing and awareness to increase customer knowledge and appreciation. Builders and contractors can offer the technology, but unless the customer wants it, there is an opportunity that the product is not installed. A large scale marketing campaigns are necessary and customer awareness is primary to the success of energy efficiency technologies and products.

Follow-up comment: Technology transfer, which will include marketing and awareness, will be part of the ETAC initiative.

Question: Do we have a list of emerging technologies that we are talking about?

Response: The development of a list will be based on the input of the Advisory Committee and will be supplemented with information obtained through the RFI process.

Comment: In Europe, they are using some cutting edge technologies that are not being using in the United States. Is this the type of thing that we are looking for?

Response: Maybe. Applicable questions will be: Is there proven data that it works? Has it been tested in accordance with US standards? Does it meet US safety or other criteria? Is it able to be manufactured in the U.S. or otherwise distributed cost-effectively?

Comment: Becky Wingenroth of EPRI has a roadmap for Power Delivery & Utilization that might be helpful. It contains a list of technologies that might be considered for this initiative. She will send it to Chris Coll who will forward it on.

Comment: There is a regional aspect to this discussion. A technology might be underutilized in one region but not another. This might be a good place to start. Look at technologies that are used in one region, but are yet to be picked up in New York.

Question: Will these technologies be scrutinized for cost-effectiveness, such as a TRC test?

Response: A technology would not have to pass a Total Resource Cost (TRC) test in order to be considered for this program. However, we want to know that the technology has the potential to be cost effective in wide spread use. As part of ETAC, the technology will not necessarily be incentivized through the Energy Efficiency Portfolio Standard (EEPS), which imposes TRC requirements on measures. Following a period of successful demonstrations, NYSERDA expects that some technologies will become part of the EEPS-funded portfolio of NYSERDA programs, so cost effectiveness will be monitored. In other cases, products may go straight into widespread use without the need for incentives.

Question: Will building methods rather than products qualify?

Response: Yes

Question: Is this program subject to the same limitations as other NYSERDA programs, with respect to funding for specific fuels?

Response: No. We this initiative will be fuel neutral. We are not specifically targeting one fuel over another.

Question: Are we only going to consider efficiency, or are new applications (grid reliability, for example) also eligible?

Response: As long as it's a residential application, not industrial, it will be considered, but at some point it needs to connect to system reliability and energy efficiency.

Question: Will multifamily be considered?

Response: Multifamily has its own ETAC initiative. We are looking at 1-4 units and low rise (less than three stories) units.

Question: Will renewables be considered?

Response: Yes, provided the application is small, to scale with residential applications.

Question: Will LED lighting be considered?

Response: Yes. LED lighting will be considered.

Question: What is the timeline of the flowchart?

Response: NYSERDA expects to support at least one technology demonstration period each year, maybe a couple times a year. The RFI takes a couple months. The PON process is typically a six month process from release of the solicitation to contracts. It may take 3-6 months after a contract is in place for a demonstration to hit the ground. The demonstration itself may take a year or more depending on the scale.

B. Identifying market barrier for emerging technologies

NYSERDA is seeking Advisory Committee assistance and suggestions for identifying market barriers for emerging technologies.

Comment: A primary market barrier is that there is no state energy efficiency policy.

Response: The State Energy Plan is currently being drafted and will be open for public input in September 2012.

C. Lighting as first demonstration

Lighting is one of the primary targets of EEPS. NYSERDA is currently administering a Point of Sale (POS) lighting program that focuses on LED and specialty CFL light bulbs. In the future, NYSERDA hopes to include fixtures and controls as part of the POS program.

There is not a lot of consumer familiarity with solid state lighting, and lighting represents an area of great opportunity to reduce electric consumption in the residential sector. NYSERDA proposes to target solid state lighting with the first ETAC demonstration PON, prior to the release of the RFI.

NYSERDA is requesting feedback and concurrence on lighting as the first ETAC demonstration. All Advisory Committee members agree that lighting makes sense as the first demo.

Several Advisory Committee members offered input on lighting. Becky Wingenroth offered lighting experts from EPRI who would be open to discussing NYSERDA's plans.

The Lighting Research Center (LRC) is one of the largest organizations that can assist with LED lighting. Jeremy Snyder offered that the LRC can be a neutral evaluator of available lighting technologies.

Rick Bain, from CREE also offered to provide input on the topic.

The next Advisory Committee meeting will focus on lighting, NYSERDA will make sure to schedule the meeting when all of the parties interested in discussing lighting can be in attendance.

Comment: The CREE website has generic whitepapers that are publically available at www.CREE.dom. Chris Coll will send the link to Committee members.

D. Request for Information (RFI)

While NYSERDA prepares the PON for the lighting demonstration, it is important to look toward what technologies the next demonstrations will target. In late summer 2012, NYSERDA will put out a RFI to identify technologies to be addressed beyond 2012.

V. Demonstration PONs

A. Schedule

Technologies will be installed or implemented at demonstration sites across the state. Data will be collected on costs, energy and non-energy benefits, logistics, operations, and lessons learned. We will want to identify and develop infrastructure initiatives in terms of training needs, certification needs, supply and distribution development, operations and maintenance. Opportunities for demonstrations will be announced through technology-specific PONs depending on feedback from the Advisory Committee and available technologies.

Comment: There should be an immediate focus on public relations. PR should be worked into the demonstration process.

Follow Up: Tech transfer and marketing will be part of the demonstration projects.

B. Criteria for proposals

NYSERDA has identified the following criteria for the PONs and seeks feedback from the Advisory Committee:

- Proposals should be a “team” effort
- To the extent possible, the proposal should reflect a comprehensive approach
- Identify all team members and provide qualifications
- Identify market barriers or infrastructure deficiencies
- Include demonstration sites
- Include plans for evaluating/measuring impact
- Include strategies for technology transfer/PR
- Include cost-sharing

Funding for the demonstration projects will cover incremental costs associated with the technology as well as for supporting the data collection process (ex. extra equipment, meters).

Demonstrations may include specific products made by specific manufactures that stand to benefit from these demonstrations. NYSERDA would expect that manufacturers that will benefit from the results of the demonstrations, to contribute to the cost of the demonstrations as a cost-share.

Question: What is the scope of the demonstration site?

Response: NYSERDA expects that there would be multiple sites, probably more than a half dozen. We expect various stakeholders would be able to visit the demonstration sites.

Question: How many demonstrations can be done per technology?

Response: It will depend on the proposals received and the cost.

Question: When does tech transfer occur?

Response: Throughout entire demonstration.

Question: Are there concerns about intellectual property infringements through the tech transfer component?

Response: Publicly funded projects are subject to public disclosure. However, if a product is already commercially available and NYSERDA is not supporting product development, protection of intellectual property should not be an issue. Only the project that is being funded is subject to disclosure. We would not expect to infringe on intellectual property rights.

C. Qualifications for proposers

Builders and contractors that are part of the proposing team must be a current NYSERDA partner in good standing in the program. NYSERDA seeks input on qualifications for other types of team members through the Advisory committee and the RFI process.

Suggestion: There should be a measurement/evaluation qualification. Impose standards on what you are looking for in terms of evaluation and data collection/analysis so that data can be standardized and useful. There should be guidance in the PON so that the proposers are aware of the expectations.

Suggestion: Qualification and credential requirements should be technology specific.

Credentials and qualifications for demonstration team members will be outlined in each PON.

D. Review and evaluation of PONs

NYSERDA proposes that proposals will be evaluated by the following criteria:

- The comprehensiveness of project, as applicable
- Total cost
- Cost effectiveness
- Statewide impact (geographic distribution)
- Whether the plan addresses market barriers or infrastructure deficiencies

- Tech transfer plan (publicity and PR are inclusive)

Suggestion: Measurement plan should be included.

Suggestion: Market impact should be included in review and evaluation of proposals.

Suggestion: Add an economic development component.

Suggestion: Proposals should also be evaluated for innovation or an original application of a technology.

Question: Is there opportunity to partner with NYSERDA for marketing?

Response: Yes, marketing will be a component of the technology transfer.

E. Measuring results of ETAC demonstrations

Demonstrations require measurement and validation. The proposing team is expected to take an active role in measurement and validation throughout, in coordination with NYSERDA.

F. Technology transfer

Technology transfer will be supported by demonstration participants, led by NYSERDA staff. Elements will include:

- Case studies
- Press events, press releases, articles
- Presentations at seminars and training conferences (ACI)
- Web sites
- Stakeholder group

We would expect demonstration participants to present at conferences, training seminars and webinars on their experiences and results; and participate in press events. We would also expect demonstration participants to provide information (content) for case studies.

ETAC Budget

For the residential sector, the budget is on average one million dollars each year for five years. NYSERDA expects to pay incremental costs associated with product or process and/or data collection. The expectation is that members of the team who would benefit from the promotion of the products would provide cost share. Specific cost share requirements will depend on the technology and will be outlined in the PONs.

VI. Adjourn

A. Wrap up

NYSERDA will put out an RFI in the next couple of months. As an Advisory Committee member you can respond to the RFI or provide feedback directly to the Advisory Committee.

B. Next meeting

The next Advisory Committee meeting will focus on the first PON, which is lighting, and the RFI. It is tentatively scheduled for the second week of August. Chris Coll will schedule the

meeting and will also share the current list of Advisory Committee members with the group. Current Advisory Committee members are encouraged to identify any other individuals that should be considered for Advisory Committee membership, to ensure all stakeholder groups are represented.