

Small Wind Working Group Committee Meeting

Tuesday, October 18, 2011
Conservation Services Group
75 Lincoln Hwy. Iselin, NJ 08830
9:30 am to 12:30 pm

Note: The notes below highlight what was discussed at the SWWG meeting on 10-18-11. Research on finalizing the changes to the small wind rebate program in NJ is on-going. Since this meeting and the two public comment periods that followed this meeting the Market Manager and BPU staff have learned more about some topics such as the DCA's requirement for field listing.

Introductions:

Agenda item#1 – Purpose of Meeting and Stakeholder participation:

Scott Hunter stated that the purpose of this meeting is to discuss the proposed changes to small wind REIP which one of several rebate incentives in the clean energy program. During the meeting we will refer to the document called "Small Wind Program Design Changes 10-12-11 which details the proposed changes. This document and the agenda were sent to the Small Wind Working Group (SWWG) and posted on the SWWG committee page on 10/12/11.

Scott reviewed that the BPU has carried out legislature to build renewable energy (RE) and energy efficiency (EE) programs. Changes are incorporated in compliance filings and developed annually. Scott stated that staff is working on 2012 changes for 2012 compliance filing. They include changes to program, including budgets. Changes are reviewed through a stakeholder process. This meeting is focusing on small wind changes for 2012. In addition to this meeting there are two other items that the wind stakeholders should be interested in.

Scott said that the first item is a stakeholder meeting for Comprehensive Resource Assessment. Every 4 years the BPU go out to the public to develop the resource funding for EE and RE programs. Scott said we are currently working on the period 2013-2016 for funding level for Social Benefit Charge. Right now the REIP wind program uses funding from a Comprehensive Resource funding that was developed from 2009-2012. During the CRA process, the board has issued an order asking about 30 questions for RE and EE program design. The answers received will be used to develop the CRA filing of 2013-2016. Public hearings are scheduled in Trenton during early November. After the hearings have finished, the staff takes public comments and develops a recommendation for the board. These recommendations will be put it into a straw proposal for public comment. This should be done by first or second quarter of 2012.

Scott discussed that another item that would affect the wind stakeholders is the Energy Master Plan (EMP). It was updated in 2008, but the Board was directed to revise the EMP in 2010. In June 2011, a revision of EMP was released and working groups were developed to carry out changes. One of the working groups deals with clean energy funding. The first working group meeting is this Friday at Eco Complex.

Questions?

Audience member (installer): Where can I go to learn exact location of EMP on Friday?

Scott H: It is at the Eco Complex in Bordentown, NJ

Scott H: For this meeting we will focus on the wind program design changes for new applications when we open the program. These changes are necessary since we had two turbine failures in February and March 2011. Safety concerns and consumer protection will be an important factor for 2012 compliance filing.

Agenda item #2: What activities and actions taken since these failures:

1. NREL Study:

Scott Hunter stated that the BPU staff and the Market Manager team (MM) conducted research for the turbines that were currently participating in program with approved REIP applications. BPU is funding a study to help inform program design and recommend changes to provide safe guards going forward. The BPU looked for vendors to perform forensic studies on the 2 failed turbines. NREL was chosen to perform the forensic studies. The contract is almost 100% complete and we are about ready to schedule a kick off of that study. It will be conducted within 3 months from date of kick off. It is anticipated that the kick off will be mid November with the results reported back in February. If results recommend any design changes that were overlooked during this review of program design changes, they will be presented to staff to incorporate.

Questions?

Audience member (installer): Almost 100 % complete - What's missing?

Scott H: Last remaining signature with NREL.

Audience member (customer): Any outliers to program, for approved projects to be able to receive rebates.

Scott H: This question will be addressed later.

Audience member (attorney for manufacturer): Budgetary issues for the study have been completed?

Scott H: Yes, it has never been budgetary issues, just a matter of execution.

2. Presentation #1- Activities and Actions taken since the failures:

Charlie Garrison reviewed Presentation #1 Activities and Actions Taken since SWWG on 4-14-11.

Charlie stated that the BPU kept participants aware of status of program and their projects with letters and posts on the website.

There were 10 different turbine manufacturers in the program and after all the research and reviewing the details to their answers, the manufacturers were grouped into 2 different categories – those that the hold would be lifted for current approved projects and those that the hold would not be lifted for current approved projects. Eight manufactures had no issues, so were able to move forward with rebate. Temporary hold was lifted. Other turbine manufacturers needed to be further looked into. UGE was removed from hold list on Sept 30th so those projects are also o.k. to move forward.

Charlie reviewed that we currently have in the REIP wind program:

- 36 in approved status, no new applications have been approved since hold
- 8 projects on hold due to reasons discussed above
- 22 projects can move forward
- 6 have moved forward, receiving rebate checks

Charlie reviewed the compliance filing process. This process will form the basis of the 2012 program. The comments received today during this meeting and during the public comment period will influence the final compliance filing that is filed with the BPU for approval. At the end of November staff will post the final 2012 compliance filing. The renewable energy program changes are listed in the Honeywell compliance filing in the second half of the document.

Questions?

Audience member (attorney for manufacturer): I would like to clarify status of pending applications and new applications. Is it correct to say new applications will not be accepted until new program is approved?

Joanne Bachmann: Yes that is correct

Same audience member: Can the 8 projects currently on hold not be completed until NREL study is complete?

Scott H: They can be completed if the system receives a passed report from a field listing. The Department of Consumer Affairs (DCA) has contended that without a certification of the entire system, the turbine must have a field listing performed. DCA has mandated that a field listing is required without certification.

Same audience member: If Xzeres projects have satisfied program requirements including a field listing or certification, can they move forward for payment.

Scott H: Yes

Same audience member: This is on a case by case basis?

Scott H: Yes

Audience member (installer): I don't understand what's involved in field listing. What is different from unit to another unit? Unless something in the system changes, won't the systems all be the same.

Scott H: The system lacks certification

Same audience member: If you successful complete one field listing for a turbine, won't it satisfy all requirements for that same turbine?

Scott H: I believe DCA says it must be done case by case.

Joanne B: We'll look into this, but our understanding is system by system but we would have to believe that the 2nd system's field listing would be simplified if the same NRTL handled both of them.

Same audience Member: Does there exist, or a way we can create a process where an entire system can get certification, as opposed to a unit by unit basis.

Darren Port from DCA arrived and the question was posed again to him.

Same audience member: Darren, with the requirement of a field listing, if one installer had many of that same systems being sold and installed in NJ with the only difference in the system is the tower height, why is it necessary to have a field listing per unit?.

Darren P: We don't know if things have changed or not changed in systems, which is why a field listing is necessary. Cost for 2nd, 3rd or 4th system will be less. The full research will be done for first system, and a much less tests will need to be done for other installations.

Agenda item #3 – Draft proposal for changes to the REIP wind program – Joanne Bachmann and David Damiani

Joanne and David review PowerPoint presentation #2 – Draft proposal for changes to the REIP wind program. Joanne discussed that the recommendations are categorized in 8 different groups and once we review the changes for each group we will open to questions on that topic.

The 8 groups are:

1. Certification/Safety/ Turbine Eligibility
2. Insurance and Bonding
3. Warranty Information
4. Program Inspection Process
5. Calculating Estimated Production for rebate determination
6. Rebate Payments and Rebate Structure
7. Paperwork Changes
8. Implementation of Program Changes

David Damiani discussed the first topic – Certification/Safety/Turbine Eligibility: David reviewed the section in the document on Certification/Safety and Turbine eligibility. He discussed the certifications that will be required for turbine with swept area less than or equal to 200 meters squared and the certifications for turbines with swept area greater than 200 meters squared. Because of the incidents, extensive research was done to ensure safety going forward. As discussed previously, we contacted many manufacturers on performance, certifications, safety, other issues, etc. We learned that the US didn't necessarily create a certification process. AWEA adopted components of the IEC, the European certification.

The question is how many manufacturers go through the certifications. We learned that not many have undergone this level of certification. This is why a field listing is required

however in the long run a field listing is not sufficient because a field listing is not a full on certification. It is a site by site field listing of each install.

Question from an audience member (Installer): Is criteria already listed for field listing?
David D: Recommendations will be shown in upcoming slides.

Joanne added that the recommendations discussed in the document for certification have all come from comments sent in by NREL, AWEA, DWEA and SWCC and turbine manufacturers. The BPU and MM are not experts on certification, so we need everyone to let us know what the appropriate guidelines for certifications are.

Scott Hunter added that these recommended program design and criteria adds a new structure that will allow turbines to participate now through different paths and options for them to move forward.

Question from the audience (Installer): What about UL or CE listing international? Is this acceptable?

David D: No this certification is different because although each component may be UL listed, because of the incidents we are looking for the whole system to have certification based upon the AWEA or IEC standards.

Question from the audience (Manufacturer): If the manufacturer is in the process of getting the appropriate certification, can they move forward?

David D: No, until they are certified, they will need field listing.

Questions from the audience (Installer): 2011 NEC specifically deals with small wind turbines. It was accepted and published by NEC, but NJ local code inspectors are still running under 2008 NEC code. What is the process of adopting 2011 NEC?

Darren Port: In 2012, you will probably see the 2011 NEC code adopted by NJ.

Scott Hunter: Are those recommendations you can make to us?

Darren P: I can get you the chapters.

Q: Question from the phone (Manufacturer): So what is required – is it a mandatory power performance test and if not, a field listing is required or both?

Scott H: Power performance is still required, as we pay rebate based on performance.

David D: For program requirements, we've always required a certified power curve and that will continue. Field listing is DCA requirement.

Trudy Forsyth from NREL said that for Turbines over 200 m squared, a design standard for all turbines is being considered. The Das 1 committee is getting ready to reconvene. Trudy said she was meeting with Anne Margolis from Clean Energy States Alliance (CESA). The group is thinking of adopting a UK renewable standard draft to get some consistency for the mid-sized turbine market. It would not be a formal standard for quite some time.

Joanne B asked Trudy if should could help update the section for certification on midrange and large turbines, to help make the certification requirements clearer.

Question from the audience (Wind turbine Dealer): Can you clarify timing here; if a project has already passed a local inspection but the project is not complete in the program does it need a field listing.

Darren P: Not sure, have to look into. Historically we usually don't.

Question from the audience (Installer): When will the SWCC complete the certifications? Brent Summerville from the SWCC said that timeframe depends on status of turbine within the certification process. If a turbine is already installed and under test, data required to do power performance test can be a matter of weeks or a month or two.

Question from the audience (Installer): Slide says field listing evaluation is cost for customers. What is approximate cost and timeframe?

Darren P: Going to direct comment to Scott.

Scott H: We are rapidly approaching questions regarding field listings.

Joanne Bachmann asked the group, what documents are given to the turbine manufacturer when they receive certification?

Brent Summerville spoke for the SWCC. SWCC certification would be in the form of a certificate, a summary report and a consumer label that shows single number ratings. It will specify type and specifications of turbine.

Trudy Forsyth discussed the IEC certification documents. She said that a Type certificate would be issued with the make and model of the turbine for systems that are full type certified to the IEC 61400-22. Trudy also stated that very few have that full certification. Many turbines will have test reports for power performance, safety and noise. Trudy: 61400-22 tells you what is required to achieve certification. Trudy felt that they summary test reports for power performance, safety and noise should be sufficient to show proof of compliance for certification.

One manufacturer stated that the reason why the AWEA standard was adopted for small wind is that IEC standard was too expensive and didn't add more value to consumers. Lighter on design standard but higher on consumer information.

Joanne said that she had been hearing that some of these smaller vertical turbines going the IEC certification path because the market is bigger overseas products and the IEC certification is more accepted.

An audience member also said that the UK turbines are geared toward IEC standard, but AWEA standards are more accepted here in US.

Next, David Damiani discussed the field listing DCA requirement.

The DCA field listing effective immediately. It includes reviewing compliance with National Electric Code (NEC). Sent emails to a dozen NRTLs and one of the representatives came in and talked to MM team. They sent a document sketching what is involved for a field listing. David reviewed the list in the PowerPoint presentation. He stated that we are not stating that this is what the DCA is going to require we are just sharing with you what one NRTL shared with us on their approach to a field listing.

Darren Port from the DCA stated that the DCA is interested in the safety of the full assembly. Typically the major components have all been UL tested, but the most important aspect of a field listing is testing the assembly. Darren stated that local code official wants to see summary report and label on the turbine. There should be a copy given to the code official.

Audience member (Installer) stated that there is confusion in industry regarding UL listings. Not all components are always UL listed, but the main components need to have UL listing. Oregon shut down entire program because they had a problem with this.

Trudy: UL historically has had a code used for the inverter and only the inverter. UL is in the process of developing 3 new electrical standards, to cover all three major components of wind turbines.

Audience member (Manufacturer): There have been a few states that a single field inspector or someone in a central office has made the decision for strict label and putting the industry in a difficult position. It should be on the consumer opposed to the industry.

Joanne explained that the NRTL that we met with stated that the field listing would be would be a 3 day process if everything went smooth and if it were just a three day process it would be about \$3000 or \$1000 per day. If it doesn't go smooth it could be upwards of \$25,000. It could be as long as a 3 month process from the time you call them until you get the report for the very first field listing that they perform on a specific system in NJ.

Same audience member: When the new program is in place, will the field listing still be required.

Scott H: It is already a requirement. Every turbine without certification is required to go through a field listing.

Brent Summerville stated that the SWCC has 28 turbines under testing and about 8 turbines are very close to issuing full certification.

Trudy Forsyth stated that to her knowledge only 1 small wind turbine is fully tested and certified under the IEC standards.

Audience member (Installer) asked about extensions for existing system approved in the program: He stated that the program had 6 months under hold and now you are saying that it will take 3 months to complete a field listing. Time has been wasted and extensions are needed.

Joanne B: Save this for later when we cover the last section of the document.

Insurance and Bonding Requirements:

Joanne stated that the MM team has done extensive research on this. Installers, distributors and manufacturers of turbines involved in each project requesting a rebate in the REIP must have standard comprehensive General Commercial Liability Insurance that includes both Completed Operations and Product Liability Insurance.

Installer needs to get these, however we learned insurance policies that will cover product safety incidences will come from manufacturers. If something happened to installation, it is on installer and critical for installer have insurance.

The program needs proof and certificate of insurance for each project. This will be required at initial application.

Joanne discussed that the MM researched bonding and from what they learned it doesn't satisfy concerns and issues for us here in NJ. We learned it was a very large expense, so we are not recommending a construction or performance bond be required.

Scott H added however if anyone knows differently we are looking for any concerns or comments from everyone to let us know if bonding is something that seems important.

Comment from phone participant (Manufacturer): In NY, NYSERDA requires manufacturers to backup the work of the installers. In the event of a dealer default, customer isn't left stuck. In case of a bankrupt manufacturer, unfortunately there is no insurance policy in place to protect customers.

Joanne B said that what we have been told is that because one of the recent issues were a blades failure, which would be considered a product defect so the product liability portion of the policy should cover this issue.

Warranty:

Joanne stated that the MM also learned that a 5 year warranty is not standard in this industry and therefore, the program will be requesting copies of the warranty from the manufacturer or the turbine and inverter and we need to make sure that the contract covers the 5 year warranty for the installation at minimum.

Comment from a phone participant (Manufacturer): We have had quite a few numbers of dealers go out of business during the 5 year warranty. The concern is that without a firm requirement, who is responsible for the warranty? Typically installers may go out of business.

Joanne said that is a great point. Who will be the backup the installation warranty when that happens? It would be good for the program to require the manufacturer to back up the warranty for the installer in case the installer goes out of business during 5 year warranty. Any thoughts on how we should handle this?

Comment from phone participant (Manufacturer): The way NYSERDA handles this is that an installer must submit a letter to NYSERDA from the manufacturer that they are an

authorized installer for the product and they will stand behind the installer in case of default.

Comment from an installer: Who takes the responsibility of failed equipment, installer or manufacturer?

Mark Mayhew from NYSERDA said it fall on shoulders of installer to fix the equipment. We have an addendum that covers this. Both the customer and installer must sign this.

Scott H: This is something that may not be sufficient, but is necessary.

Comment: I think this is necessary but every manufacturer warranty differs slightly.

Liability on installer's shoulders will vary. This may drive the installer out of business if unforeseen costs fall on installer's shoulders.

Question from the Audience: What if installer's offer a maintenance package to the customers?

Joanne B: Installers should be offering maintenance packages to customers. Another concern of the program is that we have paid out a rebate for something to produce a certain amount of clean energy. If it breaks and no one is taking ownership of it, the money spent by the program is at a loss. These changes are meant to protect that scenario as well.

Comment from audience (Installer): How far into the warranty can we go. What if someone has tampered with the equipment, are we meant to replace and maintain that? When will it be voided?

Joanne B: They should be items that are included in the contract between the installer, manufacturer and customer. Contracts should be very clear on what the customer can and can't do to the equipment.

Scott H: We need more clarity on these warranties. Is it manufacturer, installer? What will warranties be for 2012? Feel free to provide public comments on this section.

Program Inspection:

David D reviewed the program inspection process. David said that 100% of wind projects are inspected by the program inspectors. It is a performance based inspection, very different from local inspection. Not much will change about process except for addition of a few components.

The program inspection will only take place after the Final Paperwork has been received by the program. The final paperwork will include the UCC and EDC notification that the system has been authorized to be energized by the EDC.

Installer must be present during the inspection. The program will also require that the installer takes a picture of nameplate on turbine. Data collected on site will be brought to the office and some calculations will be done to verify rebate and program requirements.

Joanne B said that rebate can be affected when Final As-built paperwork is submitted as sometimes parameters change or performance was not accurately predicted during the initial process. The rebate will not increase but can decrease.

Calculating Estimated Production for rebate determination

Scott H stated that if there had not been failed turbines earlier this year, the March SWWG would have the meeting to discuss performance issues as we have learned that the wind systems have not been performing as expected.

Joanne B reviewed this section of the document. Calculating estimated power production in NJ has not been accurate. Everyone's feedback from the last meeting and public comment period is that we are not accurately calculating system production in NJ. Better power curves need to be implemented. There is no accurate wind speed map. It changes year to year and we can only use what we have available to us at the time. We are proposing to use universally the NREL 2003 validated wind map. We are also proposing that we require use of a new tool called DSAT. That was developed by the Cadmus Group with funds and backing of the US DOE. This product has a free component so requiring the use is not cost prohibitive.

A comment from the phone (Software tool manufacturer) was that free up front is not accurate is really not free to the state.

Another comment said it is free but only for the first 3 reports. After that you have to pay. Joanne said it is hard for us require expensive tools when some people are new installers to the market and some do self installations.

Another comment (manufacturer) asked if an anemometer at the site could be used instead of the default NREL wind map. Shawn Shaw from the Cadmus Group said that the tool can accept that information.

Shawn S said if an individual user had a updated wind map or updated data, other supplements be used as well.

A comment from the audience (manufacturer) was that we need to be careful accepting outside data without validating the source. Three months or so of data is not adequate. Without taking that data and comparing it to local airports and taking an analysis of that, this can be quite involved.

Joanne said that we are trying to come up with something that can be used here in NJ that everyone can use. Our plan is to get a demo of this tool and set up a webinar.

Scott H added that we have gotten a lot of customers happy to get the high up front rebates, but then coming back to us and saying it they are unhappy because the system is not producing quite as much as initially thought.

Comment from the phone (manufacturer): Based on NREL wind maps, I full support a consistent approach and use of a single wind map. But the DSAT tool is new and the approach should be looked at experimentally. It may prove to be an evolutionary improvement, but as far as I know there is no indication that that is true. No reason to undermine Cadmus tool, but should be looked at as an experiment in the right direction. NREL has concluded that typically the wind map is the problem but the tool with granularity is secondary.

Comment: NYSERDA uses AWS small wind tool, but takes many factors into consideration. They use a low, medium and high estimation. NYSERDA takes the medium estimate to pay rebate.

Scott asked how this has been functioning well so far.

Mark Mayhew from NYSERDA said that we've seen a plus or minus 20% based on what the tool has been predicting. This tool is used just for rebate, but installers are encouraged to use different tools that may make a more precise production estimates.

Rebate Payments:

New payment Schedule:

Joanne B said that we are proposing to pay 50% of rebate up front, and pay remaining 50% after actual first year production has been reported with ANSI C12 meter.

There were many comments expressing concern for this new approach. They stated that no other program has this type of payment structure. They stressed that this would hurt the market because waiting a year to get ½ the rebate would be too much of a financial burden.

New Rebate structure.

Joanne reviewed a new rebate structure that would pay less for the rebate in most of NJ but would offer a large incentive kicker if the project were to be installed in a good wind area based upon the NREL wind maps.

Comment from Shawn S said that no matter what tool is adopted, how people interpret the site is just as important as wind map. You could have a great wind site but other issues that would hurt the projects ability to generate production. You would be incenting that site over another site that is not as windy but has great siting for a wind system. Put the tools to the test and make sure this works for NJ systems already installed before you change the structure.

Joanne B said that we know we will ever be as accurate as we would like, which is why the new rebate structure has been proposed. Getting a high rebate is not a reason to install a wind turbine when the production is off, because you will have unhappy customers. Joanne reviewed some case study information that showed installed cost, wind speeds and cost per KW. We learned that there are so many systems that shouldn't be built because they have more than a 25 year payback period. The program should not be getting applications in for projects that are not financially justified. More focus should be where citing is proper and wind speeds have a chance to be successful.

Question from the audience (installer): How come residential business can't apply for MACR tax credits?

Scott H: We wouldn't consider a business at home to be residential.

JB: Our case studies focus on residences that are residences. The tax situation is above and beyond our program.

Concern from manufacturer: The financial analysis is distorted by a 6% discount rate. You cannot get 6% in market. This will skew numbers and is poor economics. He also expressed concern about the rebate payment change. Holding off on rebate is throwing customer to the luck of a draw, whether it is a windy or not windy year.

Scott H stated that this method is to ensure no gaming of unhappy customers with production.

Comment from manufacturer: I anticipate this will kill the residential market. They will not be willing to put this much money forward.

Another suggestion from phone: How about letting customer take the better of 2 year production like MA. Although this structure slowed down the participation in the program greatly.

Scott H: Have they adjusted this structure?

Comment from the phone: Now they just use estimated production. They have a method they are happy with. They came up with an approach that just holds back 10% and then pay the 10% once a customer reports production. They are using the 10% as an incentive to get data on system production not to pay on system production. Customers must report monthly. A much smaller hold back of the rebate may be more beneficial to program and customers.

Darren Port: This is reminiscent of Energy Star discussion, where we decided it was best to go with a full up front rebate.

Comment from an installer: Expecting residential customers to wait that long for half a rebate is penalizing them twice and is not going to grow the market but halt it for residential.

Scott H: Ok so rather than poke holes at proposed changes, offer alternatives to these changes to achieve the most accurate productions reported up front.

Comment from installer/distributor: I am concerned that this meeting and rule changes proposed today only seem to be hindering and discouraging participation in the program. One thought is that the rebate becomes a loan rather than a cash incentive and payments or repayments of the loan would be based on the production. The unfavorable production can then fall on the installer or manufacturer. Proposed changes seem to have offered

safety to the program but did not seem to contain ways to incentivize the program for customers.

Scott H: The board has thought of a loan idea, although it is something that has a lot of elements and factors and may be too big for a small timeframe of this nature.

Phone Comment (DWEA): I am glad the timeframe issue was brought up. The most important thing right now is to tweak this recommendation in order to just reopen the program as soon as possible.

Paperwork changes:

Joanne B discussed that the paperwork changes listed in the document were mostly to reinforce to the customer that working with your installer to get accurate production estimates is extremely important and the BPU and program are not responsible for system that produce less than what was estimated for rebate purposes only.

Extension Policy changes:

Joanne B discussed that the Market Manager recommends that no extensions be granted for projects under the previous rebate programs and that any project with an existing commitment that does not complete within its previous commitment length submit a new application under the improved rebate design to ensure that all projects and program participants enjoy the protections of the proposed program design.

New Business or clarifications:

Where do we submit comments? Public comments due by Oct 26 and can be submitted to Publiccommentwind@njcleanenergy.com

Darren Porter: Legislation passed that task the DCA and BPU to create small wind guidance manual. From time to time office of legislature services has asked that status on that manual. Once that is put together we also have to hold public hearings. This would be a straight forward document for small wind guidance in NJ. We are looking to work together to do an overview, glossary of terms, etc. Once rules are set up it will be good to start working on that.

JB: Plan to have small wind working groups once a quarter going forward and this is a topic that can be discussed.

Meeting adjourned at 12:35 pm.