

Notes from Net Metering and Interconnection Stakeholders Meeting 6/7/2013

Scott Hunter – welcomed the group and thanked the EDC personnel for coming in the middle of a storm and promised to keep the meeting short since the EDC 's are on storm watch. Those in the room and on the phone introduced themselves.

I-Update of P.L. 2012 c.24 (Solar Act) Net Metering Aggregation Standards (Scott Hunter, BPU).

Scott said that the Net Metering Aggregation Standards have been adopted. In same NJ Register, there were other changes as the Energy Competition standards were readopted, and the on-site generation rules were adopted. All these rules are now in effect. It was suggested that during this meeting we discuss implementation of these new rules and review any issues and concerns regarding the implementation.

Josh from ACE shared that ACE led the development of draft riders and tariffs to implement the net metering aggregation standards and ACE is planning to send the draft to the other EDC's to review and see if the draft is missing anything.

A stakeholder comment on the phone requested a brief overview of what was approved. Staff advised they reviewed the plain language of the law for net aggregated metering and developed regulations that expressly interpreted the law. Staff have been looking at the Solar Act sections together and how each implementation decision affects the whole including the oversupply of the SREC market.

EDCs commented on the implementation of the net metering aggregation standard – PSEG staff said they are getting a lot of questions about the rules in reference to projects that span over 2 EDC territories and suggested that Board staff post some FAQ's on the website to further clarify the standards and the language written in the registers or Board orders.

A stakeholder questioned how the net metering aggregation rule would affect the billing at the account. Staff advised that nothing really has changed in this regard. Billing is the same as a normal behind the meter projects. The only billing issues will be the host billing account. The satellite accounts will be billed at their normal rates and receive a check for at wholesale rates for net excess generation at the host site.

A stakeholder question arose in reference to tracking installations using the rules in reference to breaking out the reports by aggregated net metering. Generally, tracking each aggregated net metering wouldn't be an issue. A concern will be the ability to keep

the billing information confidential. Staff wished to know if the EDC's could help staff understand which solar installations are using this practice of net aggregated meter. ACE said they already track it in the reports they use internally but they would not want to have client information public.

A stakeholder question arose as to how much is being used at the host site and how its aggregated? Most sites would only know the excess and they wouldn't know the historic usage.

A stakeholder question arose in reference to rules: The language is confusing and should read "The host site processes excess over the consumption then any remaining excess at the end of the annualized period is paid LMP". The only role the other meters play is in sizing of generation."

Question – in the rules for aggregated net metering, paragraph F seems confusing regarding the true up. Scott said he would review with Rachel but he feels that the excess kilowatt hours are determined by excess kilowatt hours looking at the host site calculated over the annualized period not the combined energy usage.

II-Impact of Implementing the ANEM Rules (Josh Cadoret-ACE) – Josh shared again that they have a draft developed and will be sharing with the other EDC's for review, additional items and approval prior to submitting to board staff.

III-Update of EDC Interconnection Application List Scrub Procedures (Josh Cadoret-ACE) ACE put a draft together and shared with other utilities – trying to free up the queue to make room for real projects that will be completed in a reasonable timeframe. The draft procedures are as follows:

Once a year with the utilities able to choose the timing due to volume, the EDC's would review any interconnection approval that is 2 years old or more. Additionally, if the meter were considered a constrained meter, the EDC could review any interconnection agreements that are one year old or more. Once they have a list of those projects that met the criteria to be reviewed, the EDC's would reach out to the contact via e-mail to customer and contractor and a certified letter to customer to find out if they are moving forward on the project with a request to respond within 30 days. If the projects are moving forward they should share a new expected completion date with both the EDC and the BPU.

ACE has put together a sample e-mail to customer and contractor requesting a response. Three different scenarios could result from these communications:

- Customer or installer responds that the project is no longer moving forward. This would allow the EDC to deactivate the project and let the customer know they

would have to reapply if they want to move forward with another renewable energy project.

- Customer or installer responds that the project is going to be built. Customer or Installer provides a new project completion date and this project would not get contacted again for another year if the project were still not completed.
- Customer or installer provided no response. EDC would deactivate the project and let the customer know they would have to reapply if they want to move forward with another renewable energy project.

Staff asked if there is a process for bringing in the new projects for review on previously closed circuits if we find that we can scrub some reserved capacity. ACE said the existing circuits are not going to gain anything from this process. They are closed with actual capacity not just anticipated. ACE also stated that only one circuit is expected to reopen. If an applicant was denied due to the receipt of too many applications then the applicant would need to reapply at a later date.

5 closed circuits in ACE and one will be open in January 2014 because a customer paid for a feeder so this will open.

Scott suggested that the EDC's review ACE's draft and then send him the proposal as the BPU would like to get the stakeholders input and circulate it as a straw.

A stakeholder question arose regarding the definition of closed circuit for ACE. ACE staff responded that it is a circuit that has known chronic voltage problems and for that reason ACE will not accept any more generation of any type. It is not tied to a megawatt capacity standard. There are no formal rules about percentage of renewable generators or capacity that determine the closure of distribution circuits.

The 5 closed circuits in ACE's territory - 3 have synchronous landfill gas facilities within the circuit and two have 3 MW PV Systems.

All five closed circuits have monitors and are on load tap changers and they are helping with the voltage issues but it is still not solving everything.

It was also discussed by ACE personnel that when ACE does studies on circuits they look to stay in NJ code of + or - 4 % which is stricter than ANSI standard.

A question arose about what you can do if you want to build a renewable energy system on a closed circuit. The EDC's said that you can look at other options like constructing a new circuit but the customer would be bearing expenses.

It was suggested that ACE implement curtailment in these closed circuits to allow other systems to get installed. Curtailment is when you shut down the renewable energy systems because too much power is going back through to the circuit.

ACE stated that they do not have mechanisms for curtailment and telling developers that they will not be able to run their systems full time after they signed an interconnection agreement that does not mention curtailment will be a problem. It was discussed that no state in the US has implemented curtailment controls. It was suggested that we learn from Germany as it has implemented this. Right now NJ is the state with the highest penetration. ACE feels that moving ahead we could avoid more closed circuits with curtailment however right now the 5 closed circuits already have existing contracts for net metering and interconnection and it would be difficult to change those midstream.

A stakeholder asked- "Do the closed feeders have Low Tap C on them?" The answer from ACE: Yes they have low tap C. The 5 closed circuits have chronic voltage problems that span over 1 day a year. There are no rules or standards for closing a circuit, they are closed primary to high voltage problems and through experience ACE decided to close the feeders. They also do not have qualifiers attached to them.

A question arose from BPU staff in reference to contacting customers who were previously denied access onto the closed circuit. Were these customers being informed that the circuit may open up and they can reapply? ACE replied that they will put a system in place to reach out to these customers.

IV-Review of the EDC Level 1, 2 and 3 Interconnection Agreement Form - Part 2

(Josh Cadoret – ACE)

Josh discussed that the review of EDC Level 1, 2, 3 Interconnection Agreement Form - Part 2 - looking for ways to simplify – Josh was questioning why we would need an electrical contractor signature –Originally it was there to protect the customer and in the past there was separate installers and electrical contractors and now the DCA requests that EDC's looks for that signature more so than the installer.

A question arose about how a system owner can get a copy of the permission to operate. Right now with ACE they only contact the customer and installer. With PSEG system owners are able to get the permission to operate. ACE suggested that the e-mail and contact name of the system owner be included in the "Project contact information section" ACE could send an e-mail to all those listed in the Project contact information section. John Teague said adding more contacts and simplifying the interconnect agreements would be part of the next review coming up soon on the interconnection agreements. Ivy Cheng from Rockland stated they will send letters to all e-mail addresses that are on the application.

V-Update of Solar Utility Networks: Replicable Innovations in Solar Energy (SUNRISE - Program) (Steve Steffel/Alex Dinkel – ACE)

ACE gave an update on a grant application that they submitted for the DOE Sunshot initiative looking at Replicable Innovations in Solar Energy (Sunrise grant program). The grant would involve study work around trying to increase solar penetration. For example, lower voltage to allow more head room and using Autonomous control schemes. The DOE gave ACE positive feedback on proposal and so they submitted an application and are hoping to have the project approved.

Brian Fitzsimon from Qado Energy shared that his company did receive a Sunshot award and it was for providing advanced analytics and automating the study process of feeders. They are working with utilities in New England, MidAtlantic (PEPCO Holdings) and California. ACE has helped them understand key issues for the report that will be published in Q4.

VI-Update of N.J.A.C. 14:5-3.2 vs. ANSI 84.1 Challenge to maintain voltage band when delivering power +/- 4% vs. +/- 5% (EDCs)

Having NJ accept +/- 5% was discussed with the other utilities and there was no opposition— 2 utilities agreed to support directly and one on the sidelines and ACE lawyers are working on a draft proposal for the rule change.

VII-Follow-up to Active Voltage Control and UL-1741 (Alex Dinkel-ACE/Mike Sheehan-IREC)

Mike Sheehan from IREC said that at the Solar Power International conference, he met a project owner with an installed system in NJ that had wanted to go outside of UL 1741, unless it was a Level 3 project, and provide active voltage control. In the past, in order to get rebates we have not allowed them to do this but with SREC market they can. ACE has been involved in understanding this and is interested with helping IREC with getting operating practices around this. ACE feels it is important to understand the concerns around this and not take this too lightly. They want to study and test how we go about permitting inverters outside the UL 1741 and see if we can get active voltage control. Scott did share that developers are currently allowed to use non-UL 1741 for Level 3 inverter projects, but the interconnection approval process is more involved. ACE is learning and is not comfortable yet but they are planning a test location with a 10MW system and are using a DOE small grant to get the monitoring equipment and to try and test this. The inverter they are testing is new and developed at the National Lab. The other NJ project interested in this has a different inverter manufacturer and recently that inverter company went out of business. ACE does see the need for Active Voltage Control and knows it is coming down the road and is looking at ways to test this.

Scott asked Mike Sheehan from IREC to give an update on FERC discussion with SEIA – FERC SGIS gets updated only every 10 years. Pre- application format was a large discussion. Many utilities say they do not have info readily available.

Another concern was supplemental review - Supplemental review allowed engineers to make decisions without all the rules – what is in power quality and reliability.

IREC recommended a change to the table by voltage or distance from substation not just 2 mw – so a fast track application would focus more about voltage or distance from substation – move from 2MW to 500KW.

Comment period is over and IREC hopes FERC is developing procedures for dealing with smaller generation facilities that would allow a streamlined process verse larger facilities with extensive distance from the substation.

Question arose about allowing reverse flow power at the substation level has there been studies done in this area. Alex from ACE said that this type of power does not look like grounded systems so ACE would flag it and some type of mitigation should occur at the transmission level. Reverse flow is not impossible but screens need to be in place or there could be issues. Mike suggested that we review “Reverse Power Flow into the Substation” by Michael Coddington and “Interconnection of PV Systems on Secondary Network Systems”, i.e., Interconnection Success Stories also by Michael Coddington.

VIII-Solar Installations in Network Areas (Mike Henry-PSE&G)

Mike shared that there are extra concerns and issues when you install solar in a urban setting because of the existing distribution network. He mentioned many times to be careful where you are looking to install systems as there are issues with installations in network areas and the project will need to be looked at more closely in those areas.

Question – how does a network clear – networks are fed through their own grid connected system and the transformers have a fuse that is designed to trip if it senses back-feed. Two types of networks of concern: Spot network feeds one large customer or one set of customers. The other type is an area network with multiple customers and multiple transformers.

If the circuit senses back-feed it will trip the business and this could happen 4 or 5 times in a cycle and then it causes failure of the EDC’s equipment and needs to be replaced. Need to eliminate as much back-feed on a system as possible. The EDC will need to do an impact study even for small behind the meter systems and there is a cost associated with that. Outside network could be \$10K to set up but inside network it could be \$250K because it needs to be done properly. Michael Coddington has done

many studies and presentations on this topic – just Google his name as he is an expert in this area.

IX-Miscellaneous Net Metering and Interconnection Problems/Issues (Staff)

Ivy Cheng from Rockland Gas and Electric questioned what should happen when a customer has a solar system and now is putting in a gas fired CHP systems. Is it ok to true up the now much more energy that what was projected as historical usage at the end of the annualized period. Scott could not see a problem with this situation, per se, however, we must meter the solar and CHP separately if there are two systems on site as we cannot net meter fossil fuel generators. Jim from PSEG also asked what to do with buildings that have solar systems installed but then lose a tenant and now there is little or no energy usage. Scott and John said we can put this on the next agenda.

A statement was made in the audience in reference to ACE being the first place that voltage issues are happening and we should begin to look out of the US to find solutions on monitoring the feeders and controlling voltage.