Minutes of the February 11, 2021 Interconnection Working Group (IWG) Meeting

Attendees:

DER Industry

Name	Company	Name	Company
Danielle Shultz	NYSEIA	Gurudatta Belavadi	Boreggo Solar
Seneca Cornelius	Empower Solar	Scott Sousa	Sunation
Steve Foley	Sunrise Power Solution	Greg Sachs	Empower Solar
Perri Jr. Arthur	Cedgreen Tech LI	Pete Falcier	GI Energy
Tara McDermott	Empower Solar	Lynn Arthur	Southampton Town Sustainability Committee
Daniel Wang	Spower	Jessica Price	The Nature Conservancy
Bill Feldmann	Empire Clean Energy Supply	Kyle Wallace	Sunrun
Priya Palanichamy Kala	Bloom Energy	Ronald Leonard	

PSEG LI/LIPA

Name	Company	Name	Company
Don Mathew	PSEG LI	Curt Dahl	PSEG LI
Anie Philip	PSEG LI	Anthony Gorgone	PSEG LI
Robert Grassi	PSEG LI	Jalpa Patel	PSEG LI
Iram Iqbal	PSEG LI	Evan Margolis	PSEG LI
Louis Aguilar	PSEG LI	James Domozych	PSEG LI
France Marquez	PSEG LI	Pete Mladinich	LIPA
Thomas E. Welsh	PSEG LI	Mike Simione	LIPA
Mark Sikorski	PSEG LI	Reigh Walling	PSEG LI Consultant

Introductions

Ms. Philip opened the meeting by welcoming everyone.

Attendance

Ms. Iqbal conducted a roll call and ensured attendees' names were captured. Ms. Iqbal confirmed with Mr. Falcier and Ms. Arthur that they had already submitted their executed IWG Compliance Guideline document.

IWG Compliance Guidelines

- Mr. Grassi asked all who had not yet completed the IWG Compliance Guidelines to do so after the meeting.
- Mr. Grassi reviewed the Compliance Guidelines with participants, including expectations, procedures, policies and topics to avoid which are stated in the compliance document.

Ms. Philip asked everyone to kindly submit a signed compliance guideline document if they hadn't done so already, and asked for new attendees to execute and send the document ahead of future meetings. Ms. Philip asked if anyone else had joined since the roll call began. Mr. Sachs asked if anyone from DPS was on the call, and Ms. Iqbal confirmed no one from DPS was heard during roll call. Mr. Wallace from Sunrun announced that he joined late, and executed a compliance guideline document. Ms. Iqbal asked if Mr. Ronald Leonard was on the call to verify that he had submitted his IWG Compliance document, and stated she would reach out to Mr. Leonard after the call.

1. Industry Presentation - HCM Post Launch Industry Feedback & Questions

Mr. Sachs thanked the PSEG Long Island team for all of their hard work on the Hosting Capacity Map. Mr. Sachs wanted to clearly distinguish the use case for all of the contractors and developers, and encouraged anyone to jump in and add to the conversation. Mr. Sachs explained that once the feeder info is pulled up on the map, the key thing is to interpret the data correctly. Mr. Sachs said that they use the data to try and come up with the best estimate of the cost of interconnection from PSEG Long Island, based on location and system size. Mr. Sachs said that typically they will incorporate that estimate into the proposal and system size, and continue into the application process if the customer so desires. Mr. Sachs emphasized that the goal is to find locations in need of Solar, and to deploy more Solar across Long Island.

Mr. Sachs requested a list of the upgrades planned from version 2.0 to 3.1 or Stage 3 if possible, and that developers can give feedback on that list. Mr. Sachs pointed out that they could look at The Joint Utilities' documentation, but acknowledged there are deviations between maps, then asked if anyone had questions. Ms. Philip said PSEG Long Island would take it back for review, and said that Stage 3 plans can certainly be presented in a future IWG meeting.

Mr. Sachs began to get into specific questions from developers as a whole, and asked for clarification on how to interpret the max and min Hosting Capacity values when clicking on a particular feeder. Mr. Sachs went over the min/max hosting capacity definition provided by the HCM screen. Mr. Sachs explained that his best understanding of this was that the min and max values are calculated similarly, and that just because one area may be a deep red color doesn't mean a developer can't connect Solar there, it just means there will be non-zero interconnection costs. Mr. Sachs also said to his understanding if the map happens to show a perfect

location for interconnection on a feeder, it is possible there could be no interconnection costs if the system size permits. Ms. Philip said that Mr. Sachs' interpretation is correct, but pointed out that DTT and reclose delay costs are independent of the HCM information and are determined in during a CESIR study. Mr. Sachs wanted to clarify that DTT may still be required even if a potential project is under the minimum hosting capacity value, and that DTT is not factored in to the calculation of the min and max Hosting Capacity. Ms. Philip added that the CESIR process determines the costs associated with reclose delay. Mr. Sachs expressed surprise that the DTT and reclose delay are not factors in the min and max Hosting Capacity calculation, considering that traditionally DTT is considered based on DER penetration on a feeder. Mr. Walling said the point is in many cases the costs for implementing the reclose delay considered de minimis for a reasonable sized project, and that PSEG Long Island did not want to restrict the HCM values for that kind of a cost. Mr. Walling was also sure to mention in some cases, a relay replacement might be necessary and would be a cost, but in many cases, it is de minimis. Ms. Philip said that the cost would really be minimal rather than true zero. Mr. Foley asked if a project was submitted for reclose delay or replacing the relay, would this mean that any subsequent projects would not have to cover that cost. Mr. Walling explained if someone has already upgraded the protection for the feeder, further projects would not be subject to that as well, and it would cover the whole feeder. Mr. Sachs confirmed for better or for worse, the first project on a feeder will bear the cost.

Mr. Sachs referenced a description in the HCM about how the calculations incorporate not exceeding a 70% penetration ratio. Firstly, Mr. Sachs wanted to confirm that this 70% rule is applicable to both min and max. Secondly, Mr. Sachs wanted to verify that the HCM does not assume any back feeding on the feeder, since by definition back feeding will result in a penetration ration of 100% or greater. Mr. Walling said that if everything was Solar that would generally be correct. Mr. Sachs said that Mr. Walling's answer was helpful, and expressed both excitement and concern over the current state of the HCM.

Mr. Sachs sought further clarity on how the max and min values are calculated, and presented it as an open request. Mr. Singh asked how the developer community uses the JU maps while doing a project to get to the cost. Mr. Sachs said that they use the project history and make a best guess, but also use the values in that map in the calculus, adding that the question could be taken back for a more detailed response. Mr. Singh thanked Mr. Sachs, and mentioned he would try to get EPRI documentation in order to pass on to the industry. Mr. Sachs said the reason the industry is so interested in this is that it affects the entire industry as a whole, and they are trying to figure out how to advance into the future while working with PSEG Long Island as a team. Ms. Philip said that PSEG Long Island tried to align the HCM with respect to the screening, and reiterated that it would be good to know how the industry utilizes the JU maps. Mr. Sachs said that this is a common question and that he has participated in the JU working group, who are also very interested in feedback from the industry. Mr. Sachs said he would try to collect feedback from industry for PSEG Long Island to use. Mr. Sachs asked for the technical definition of the term 'headroom' as seen in various documents including the HCM itself. Mr. Sachs asked what headroom implies about upgrades, and said it is somewhat ambiguous.

Mr. Sachs sought some guidance on when upgrades or restrictions may be required in terms of upgrades. Mr. Sachs pointed out that if someone had access to all of a developer's CESIR results, it might be possible to develop a probabilistic map. Mr. Falcier asked if there is anything on the map that indicates whether a feeder has already undergone an upgrade, in terms of DTT or reclose delay. Mr. Singh replied that there currently no indicator. Mr. Gorgone said DTT and reclose delay upgrades are all substation and project dependent, and does not believe any are on the map right now. Mr. Sachs said that the takeaway is this could be opportunity to show these upgrades on the map, and that it could prove to be helpful.

Mr. Sachs's next question was in regards to substation locations, explaining how the JU maps have a dot or indicator for the locations of their substations, but is not in PSEG Long Island maps. Mr. Sachs asked if it would be possible to make a satellite view available as a base map, in order to get a better understanding of the

characteristics in the area. Mr. Singh said that substation information could not be provided due to security concerns. Mr. Sachs said that while that is PSEG Long Island's call, there are some counter-arguments to be made. Mr. Sachs pointed out that while it would be tedious, you can open up a standard map side by side to the HCM to determine the location of a substation, and that most of the other maps in the JU display substation information. Mr. Sachs emphasized that it would be easier to be able to see the substation locations instead of having to reach out every time that information is needed.

Mr. Sachs asked if the circuits shown on the map are all three phase or if any are non-three phase. Mr. Singh said the values are primarily for three phase circuits. Mr. Sachs asked how circuit capacity differs from hosting capacity. Mr. Sachs expressed that there might not be a need for pre-application anymore, and that it might be better to go straight to CESIR for timelines. Mr. Sachs acknowledged that some cases may require a pre-application, but perhaps at some point in the future there could be an option to re-purpose it. Ms. Philip pointed out that you get real time data with a pre-application, whereas the HCM has its data refreshed periodically. Mr. Sachs affirmed Ms. Philip's point and said it will be interesting to see how frequently pre-applications are done by developers going forward. Mr. Sachs requested a note to be put in the HCM on the update frequency. Ms. Iqbal wanted to clarify that if a developer pays the $750 for a pre-application, then chooses to apply for an SGIP application within 15 days, they would not have to pay the $750 again. Mr. Sachs thanked Ms. Iqbal for the addition.

Mr. Sachs asked if "DG Connected" means that the COD has been completed. Mr. Sachs also asked if a project is cancelled and there are no changes to the feeder, would the Hosting Capacity increase? Mr. Sachs said the industry would like to see some kind of filtering or export ability as part of the next upgrades. Mr. Sachs concluded the presentation and opened the forum for questions.

Mr. Foley asked if a project incurs DTT upgrade costs, will successive projects on the same feeder incur those costs as well? Mr. Gorgone said that if a project does require DTT, it would be required per project.
Ms. Kala asked if information on SCADA or DTT already installed on a feeder would be displayed on the HCM in the next update. Ms. Philip clarified that as of right now, the feeder information relating to reclose delay is not provided on the HCM, and that PSEG Long Island needs to take that back. Mr. Gorgone clarified that SCADA is project by project and not on the HCM. Mr. Feldmann said he has a friend who owns a large building and wants to put about 1.2 MW of Solar on it, but the HCM says the max HC is .3 MW, and that .1 MW is in DG queue, so it appears only 200 kW can be put on the feeder. Mr. Singh asked if it is already connected. Mr. Feldmann said it is not, his friend just wants to know the upgrade costs if he were to put 1.2 MW on the feeder that says it can only take .3 MW. Ms. Iqbal said that just because the HCM gives a max hosting capacity value, it does not restrict an application for DG over that value, but upgrade and study costs may be incurred to complete the project. Mr. Feldmann asked how much the costs would be. Ms. Iqbal said PSEG Long Island could not disclose a cost until studies are performed. Mr. Feldmann asked how much the cost of a study is. Ms. Iqbal said generally it goes through CESIR study, but it depends on system size and screening results. The initial cost is of a CESIR is $2500.

2. PSEG LI Presentation - Comparison of Screening Criteria

Mr. Walling presented the comparison of the existing screening criteria to that of the criteria that was in effect until 10/2020. Mr. Walling went over the details and overall concluded that some criteria were relaxed, some changes due to better alignment with IEEE standard, and a couple new addition, but overall the screening is not restrictive than the prior screening which was in effect.

3. Industry Presentation - Hosting Capacity Review & Substation Backfeeding

Mr. Sachs said the general goal is to continue to install Solar and grow, and is thankful for HCM, but most of it is dark red. Mr. Sachs also said that failing a screen is becoming more and more common, and that there are an increasing number of projects below 100kW requiring DTT. Mr. Sachs said that S&P observations are showing it is becoming increasingly difficult to install Solar, and that there are mandates to install a certain amount of DER which is essential to the business. Mr. Sachs said there is perhaps a misunderstanding on the industry side that PSEG Long Island does not allow for substation back feeding. Mr. Sachs said he understands this to not be true, but that it is not explicitly discussed.

Mr. Sachs discussed some of the numbers associated with statewide adoption of Solar, touching on some challenges with the goal of 5 GW by 2025. Mr. Sachs explained that in general, they need to be installing 150% faster than they are now, and that percentage will increase as time goes on if they do not get faster. Mr. Sachs said the bottom line is they all agree that increasing hosting capacity is important. Mr. Sachs said that Mr. Banton gave a presentation on thermal limits for feeders in the past, and suggested it may need to be re-titled to 'Feeder Back Feeding.' Mr. Sachs skipped over main factors affecting DER limits, and said what is missing is a sense of frequency on how often one of these becomes the limiting factor.

Mr. Sachs highlighted an excerpt from a PSEG Long Island presentation on feeder limits. Mr. Sachs said there are short-term and long term proposed solutions from PSEG Long Island, and inquired on the status of the short-term solutions, specifically to implement manual operational procedures to select feeders based on its DER penetration. Mr. Sachs asked if any of the short-term solutions have been started. Ms. Philip offered to answer high-level, and said that as of October 2020 the DER enhancements were implemented, and that PSEG Long Island does not consider those limitations in their studies. Mr. Sachs thanked Ms. Philip for the clarification, said that the bottom line is the short-term solutions are in place, and maybe not included in the HCM. Ms. Philip said that since short-term solutions are implemented as part of DER enhancements, it is no longer a limitation as of October 1st 2020. Mr. Sachs said this is positive news and good to know.

Mr. Sachs asked when long-term solutions are implemented, will they not have impacts as far as the table is concerned, since you are already operating by the proposed value. Mr. Sachs asked if this is going to contribute to greater increase in hosting capacity after long-term solution is rolled out. Ms. Philip said it would not change anything because the short-term solutions are already implemented.

Mr. Sachs asked how the industry would know something is explicitly a limitation. Mr. Sachs referenced substation back feeding as a limit that they would not have known about. Mr. Sachs said whether it's this limit or another, it's not made to be accessible or known unless it's come across, and would like for these limits and others to be published for better visibility.

Mr. Sachs referenced a previous conversation regarding substation back feeding, and wanted to confirm that in the pre-application or application processes there is nothing preventing substation back feeding. Mr. Sachs said other members of the JU allow up to 75% backfeeding of the substation transformer nameplate ratings. Mr. Sachs said an interesting point to track would be what percentage of feeders and substations have a penetration ratio of greater than 100%. Mr. Sachs asked for a detailed overview of how PSEG Long Island performs CESIR studies. Mr. Walling said that the JU has a blanket study, and Mr. Sachs said he is learning about the nuanced differences. Mr. Sachs asked Mr. Walling if the CESIR will vary based on the pre-screens in order to make it more efficient. Mr. Walling said he thinks that things are heading that way, and Ms. Iqbal confirmed. Mr. Walling said if the issue is reaching a penetration level where 3V0 becomes an issue, maybe you do not need to do a complete voltage study.

Mr. Sachs closed his end of the presentation after outlining some potential next steps, and thanked everyone for their time. Ms. Philip thanks Mr. Sachs for the feedback. Ms. Philip reiterated that PSEG Long Island does

not limit back feeding on the system, and mentioned there will be more on Hosting Capacity to discuss in upcoming meetings. Mr. Sachs thanked Ms. Philip for those points. Mr. Sachs opened up the forum for any other comments.

Mr. Falcier thanked Mr. Sachs for cataloging all of the issues presented, and thanked PSEG Long Island for their time in responding. Mr. Falcier noted that one of the major ideas from the JU working group is that this tool can help the utility direct DER providers to areas where they would want to see DER assets installed. Mr. Falcier said he is hoping to see increased functionality on the HCM, and that increased layers is useful. Ms. Philip thanked Mr. Falcier for that feedback. Mr. Falcier said he understands there will be bulk storage RFPs, and integration of target areas into the HCM. Mr. Falcier said traditionally you would have multiple map applications open at once, but the HCM are allowing for all of that information to be condensed into one comprehensive application. Mr. Falcier said he would be happy to follow up with Mr. Sachs to discuss further.

4. PSEG LI IOAP Update

Ms. Philip asked for a quick update on the Interconnection Online Application Portal. Ms. Iqbal thanked the developer community for participating in PSEG Long Island's training, saying that the IOAP would launch the next day (2/12/2021). Ms. Iqbal asked for patience during the transition time, while PSEG Long Island works with developers as best as possible, and asked for questions. Mr. Sachs expressed excitement about the IOAP launch. Ms. Philip asked for any final questions, and thanked everyone for participating in the meeting.

Meeting Adjourned