Minutes of the November 19, 2020 Interconnection Working Group (IWG) Meeting

Attendees:

DER Industry

Name	Company	Name	Company
Danielle Shultz	NYSEIA	Marj Issapour	Farmingdale State College
Jeffrey Quackenbush	Integrated Storage Technologies	Matthew Nissen	Morton AEP Consulting/Morton Engineering
Steve Foley	Sunrise Power Solution	Scott Sousa	Sunation
Adam B. Cohen	Certain Solar	Romer Beato	Entersolar
Kris Ingebrigtsen	Sunrise Power Solution	Jean Pierre Clejan	Green Logic
Daniel Wang	Spower	Greg Sachs	Empower Solar
Bill Feldmann	Empire Clean Energy Supply	Pete Falcier	GI Energy
Mike Bailis	Sunation	Lynn Arthur	Southampton Town Sustainability Committee

PSEG LI/LIPA

Name	Company	Name	Company
Don Mathew	PSEG LI	Curt Dahl	PSEG LI
Tony Ibrahim	PSEG LI	Anthony Gorgone	PSEG LI
Anie Philip	PSEG LI	Mike Heyer	PSEG LI
Robert Grassi	PSEG LI	Diane Blankenhorn	PSEG LI
Amrit Singh	PSEG LI	Nizu Al Amin	PSEG LI
Iram Iqbal	PSEG LI	Chris Bennett	PSEG LI
Nicola Montanaro	PSEG LI	Jalpa Patel	PSEG LI
Louis Aguilar	PSEG LI	Carl Williams	PSEG LI
France Marquez	PSEG LI	Evan Margolis	PSEG LI
Thomas E. Welsh	PSEG LI	Scott Brown	PSEG LI
Mark Sikorski	PSEG LI	James Domozych	PSEG LI
Josh Brown	PSEG LI	Pete Mladinich	LIPA
John Ng	PSEG LI	Reigh Walling	PSEG LI Consultant
Steven Bruckner	PSEG LI	Shikha Lamba	Cognizant

DPS

Name	Company

Jason Pause	DPS

Introductions

Ms. Philip opened the meeting by welcoming everyone.

Attendance

Ms. Iqbal conducted a roll call and ensured attendees' names were captured.

IWG Compliance Guidelines

- Mr. Grassi asked all who had not yet completed the IWG Compliance Guidelines to do so after the meeting. Mr. Bailis and Mr. Falcier said they would submit the document 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 went confirmed who had not yet submitted the IWG Compliance Documents, and asked for confirmation from Ms. Iqbal. Ms. Iqbal said we need to reach out to the multiple people who have not signed their compliance documents, and requested that those who have not signed it to please reach out either at PAMSolarLI@pseg.com or the Interconnection Working Group email address. Ms. Iqbal emphasized the importance of signing the compliance document before joining IWG meetings. Ms. Philip echoed this request.

Ms. Philip requested for anyone speaking during the meeting to state their name clearly for minute-taking purposes, and to utilize the chat function if necessary. Ms. Philip also requested that anyone who was not speaking to mute themselves in order to avoid distractions.

1. PSEG LI Hosting Capacity Map Update

Mr. Sikorski presented an update on PSEG Li Hosting Capacity Maps Project. He presented the access request form, clear check process and displayed the sample web page of hosting capacity maps.

Mr. Cohen asked Mr. Sikorski to describe the algorithm for how the Minimum and Maximum Hosting Capacity values are defined. Mr. Bennett answered that EPRI's DRIVE software is being used. Mr. Cohen asked if it is strictly based on PV systems. Ms. Iqbal clarified, saying that it is based on all DER types.

Mr. Sachs asked for an explanation of how the Hosting Capacity values are being determined, in terms of location along the feeder. Ms. Philip said stage 2 is looking at Maximum and Minimum Hosting Capacity values, and mentioned stage 3 will provide values at specific feeder location.

Ms. Philip reiterated Mr. Sachs' question to ensure he is asking about how Capacity Map values will change based on location along the feeder. Mr. Sachs confirmed that this was his question. Ms. Philip asked Mr. Bennett to confirm that specific information based on feeder location will be provided in stage 3. Mr. Bennett confirmed this notion.

Mr. Sachs asked where he would go to see an explanation of the algorithm. Mr. Bennett said in regards to calculation, the EPRI website contains a drive that can be navigated to which contains white papers, but there is no clear documentation which explains how the values are calculated. Mr. Bennett

mentioned that the calculations are proprietary to EPRI and not divulged. Mr. Sachs found it fascinating that the algorithm would be proprietary, and asked how EPRI's proprietary method differs from PSEG's method for determining Hosting Capacity. Mr. Sachs added that the method should be based on technical requirements of SGIP. Ms. Philip agreed with Mr. Sachs, and mentioned that the technical factors driving limitations for interconnection on a feeder will vary based on the penetration for each feeder consistent with the screening criteria. PSEG LI is not just utilizing the EPRI tool as is, but since there are approximately thousand feeders, there needs to be an internal methodology consistent with screening requirements. It is challenging and PSEG LI is working to align with screening requirements as best as possible. Mr. Bennett said Ms. Philip hit the nail on the head, and that EPRI's DRIVE is a tool that needs to evolve with SGIP screenings, as well as locational and more stringent requirements. Mr. Walling said that certain criteria are put into the program and it makes certain calculations, but what is proprietary about the tool is how it makes calculations based on predicting whether limiting criteria are exceeded. Mr. Walling said the opaque part is how the EPRI tool does load-flow calculations to come up with these values.

Mr. Sachs asked about what possibility there is that the Max and Min values will differ from actual hosting capacity shown on the map. Mr. Walling said experience would tell, which Mr. Sachs understood to mean that when CESIR results come back in the future, they would be compared to the hosting capacity shown originally on the map. Mr. Walling confirmed this.

Mr. Sachs asked how the queued DG will affect the hosting capacity, and offered to help publish a question and answer document for resolving high-level questions that may come up. Ms. Philip said the queue data will be included in the Hosting Capacity Map that will be launched, and that queue data that came in after the freeze time frame will be included in the next refresh.

Mr. Sachs asked if the maximum hosting capacity will be automatically reduced based on the values in queue. Mr. Bennett said it is not automatically reduced, so at the time of the analysis running, anything that is currently producing is taken into account, and the DG in queue is anything that has not been confirmed to be completely online yet.

Mr. Bennet continued saying that updates will occur quarterly, and will show dates of refresh and re-run on the map. Ms. Iqbal clarified that DG in queue definitely has a direct effect on the availability of the feeder, and that it is being taken into consideration in the screening process.

Mr. Sachs gave an example to clarify that the system size would have to be limited if there is a DG in queue. Ms. Philip said that if there is a strong interest with the net value, it can be shown and will take it back and evaluate it. Additionally only connected resources are used to calculate the hosting capacity since there is always the possibility that DG in the queue can change or be removed. Mr. Sachs said the net is not needed, only clarification on how numbers are being calculated. Ms. Philip agreed to clarify in the definition.

Mr. Foley said it is not completely clear to him, as from a developer standpoint, he would assume that DG connected to the feeder along with DG in queue would be subtracted from total capacity. Mr. Bennett said this topic is a little complicated, stating that the DG connected is the amount of DG that is already included in models when information is sent to EPRI. Mr. Bennett said that what is shown on presentation is not final values, and that DG in queue has been approved to connect, but has not connected at time of the refresh date. Mr. Bennett said keeping in mind SGIP criteria, developer may

want to take into account the DG in queue when deciding the safest option for the size of a new interconnect. Mr. Sachs said that the key point is there is a different way to interpret it, and the DG in queue definitely has an effect on hosting capacity assuming there is no physical changes to the feeder. Mr. Sachs final comment was that there should be a comment or overview on this issue somewhere on the website. Ms. Philip said that this issue could be considered in the development of Hosting Capacity Maps.

Mr. Cohen asked for clarification on the minimum hosting capacity value, and asked how it is defined. Mr. Cohen said the logic he is familiar with is if you are trying to install something above the maximum value, then you will require upgrades to the system; if you are between the minimum and maximum, there is a decent probability that you will require upgrades; and if you are installing something below the minimum, there is a good probability no upgrades will be needed. Ms. Philip said that the interpretations of what can be accommodated at what cost in hosting capacity is subjective, and those impacts of the system also depend on the penetration on the feeder. Ms. Philip said that right now, PSEG LI is trying to align with the screening criteria as much as possible. Ms. Philip asked Mr. Bennett to confirm that the maximum capacity value mainly reflects minimal upgrades instead of significant upgrades. Mr. Bennett said that there should be a PDF document going up to contain methodologies and assumptions on everything, but they will make things more clear as feedback is received. Mr. Bennett explained that right now, the maximum hosting capacity is the maximum amount of DG that can be interconnected based on optimal feeder location with minimal cost, and minimum hosting capacity is what can be connected across the entire feeder with minimal cost. Ms. Philip summarized Mr. Bennet's point, and reiterated that PSEG LI is trying to align with the screening criteria, staying aware of the fact that it will take time to study all the feeders and adjust, as information is available.

Mr. Falcier asked if the PSEG LI hosting capacity team has been following along with what Joint Utilities (JU) hosting capacity stakeholder group has been doing. Mr. Singh said that PSEG LI has been in close touch with the JU, but the difference is that they are very ahead of us. Mr. Singh explained that the JU is in stage 3.1, and PSEG LI is currently in stage 2, pointing out that the JU had different types of feeder limitations at stage 2. Mr. Singh mentioned that there would be differences between PSEG LI and the JU, as the JU treats the tool as more of a guidance. Mr. Falcier thanked Mr. Singh for his comment, and asked if there was any way PSEG LI could participate in the JU stakeholder meetings, to which Mr. Singh replied that PSEG LI is not currently a part of the JU so that is not possible, but that they do listen to the feedback given from the meetings.

Mr. Clejan asked for clarification of the '3V0: No' value shown on the hosting capacity map, wondering if this meant that a protective relay would not be needed if interconnection was made to the feeder. Mr. Singh replied that this was not the case, and that the value signifies what locations already have 3V0 protection, as understood from the JU. Mr. Clejan then asked if the value said '3V0: Yes', would the assumption be that no protective relay is required to interconnect at that location. Mr. Singh said that he would defer that question to the relay group. Mr. Gorgone said that no feeder has 3V0 protection, and when it comes to needing that kind of protection, it is always a utility-grade relay done by the developer. Mr. Gorgone mentioned that 3V0 would be under the substation instead, and that the 3V0 on the hosting maps has to be further defined. Mr. Clejan thanked Mr. Gorgone, and said that they would not use the 3V0 map value to determine if protection is needed until it is further defined.

Mr. Foley asked about using the map to determine DG penetration as low, moderate, or high, instead of using a pre-application. Ms. Iqbal responded that the reason low, medium, or high is there is because the hosting capacity map is not implemented yet. Ms. Iqbal said that once the HCM is available, that information should be taken directly from the map, and any additional information can be found in the pre-application. Mr. Singh clarified that the numbers being shown on the map are all hypothetical and will be different in the final implementation. Mr. Walling said that listening to both sides, there might be a disconnect in the meaning of 3V0. Mr. Gorgone agreed and said that if 3V0 were listed in any way on the map it would be listed on the substation and not the feeder, but did not know how that would all get on a map. Mr. Sachs asked if the 3V0 and other values could be made clear in a document for developers to understand, to which Mr. Singh confirmed and said that a clarification reference would be made available. Mr. Singh asked how the developer industry interprets the JU's 3V0 on their HCM. Mr. Sachs said he would follow up on an upcoming industry call. Mr. Singh continued to say that there are many other values in addition to 3V0, and is interested to know how the industry utilizes those values in order to standardize those definitions across the board. Mr. Sachs agreed this was a good point.

Ms. Philip projected Mr. Bailis' text chat comment to the meeting: "So when would it be considered Medium or High? Can we assume that until 5 MW is added to the feeder, no costs would need to be applied? Once 5 MW is exceeded then the added costs apply?" Ms. Philip said that if the maximum hosting capacity is shown as 5 MW, then generally under 5 MW, minimal costs would apply, and after 5 MW, there are added costs. Mr. Singh confirmed Ms. Philip's comment, and said that EPRI DRIVE looks at the constraints, which are defined based on the available criteria. Mr. Montanaro said that the map is just a guideline, and cannot be used to determine actual cost, and continued to say that CESIR study is required to determine actual cost to the developer. Mr. Gorgone echoed this statement, and said everything is relative. Mr. Sachs said that the heart of the question is trying to understand definitions; in terms of what is minimum and what is maximum, and what are the implications on upgrades. Mr. Singh clarified by saying the minimum and maximum values are the amount of DER that can be accommodated with very little cost. Mr. Bailis clarified his question, stating that it cannot be assumed there will be no cost under the 5 MW limit in the example, because there will still be the usual CESIR costs. Ms. Iqbal confirmed this to be true, and said that what is shown in the HCM is just a high-level representation, but the costs associated with a project is really case-by-case and determined after the studies are completed. Mr. Bailis said they run into problems when they encounter feeders where the saturation thresholds have been exceeded. Mr. Bailis said having the data is great as long as ramifications are understood on the other side. Ms. Philip conveyed that in order for the user to utilize the tool effectively, they need to understand what those values mean, so these comments can be considered in the development of Hosting Capacity Stage 2.

Mr. Sikorski displayed the legend on the map, which showed available capacity on a feeder in terms of color-coding. Mr. Sikorski also mentioned that the feedback from the last IWG meeting was taken into account and implemented in terms of the zoom and pan function, showing how the user can use the scroll function to zoom in and out of the map and look around instead of just searching by address. Mr. Sikorski said that they are going to monitor the licenses and will implement an inactive period, warning users of expiring licenses for the HCM, and eventually revoking licenses with the option to reapply if required. Mr. Sikorski finished up the presentation mentioning that internally, applications would be stood up for the second week of December, allowing members of IWG to apply before the rush. Applications will be clear-checked and held so that IWG members have access as soon as the application

goes live on January 1st. Mr. Sachs expressed his excitement for this big step from what is currently available. Ms. Philip asked for any questions, and motioned to move on to the next agenda item.

2. Interconnection Online Application Portal (IOAP) Update

Ms. Blankenhorn started the update on the Interconnection Online Application Portal (IOAP) update, and said that there have been some challenges interfacing with internal systems. Ms. Blankenhorn said in order to make sure that customer-facing products are as good as they can be, the portal go-live date is delayed until January of 2021. Ms. Blankenhorn said they realize this is an additional delay, but that PSEG LI wants to make sure that the product is robust and that everyone has sufficient time to be trained on how the application works. Mr. Sachs asked if PSEG LI foresees any other delays or if there is a good line of sight to the January 2021 go-live date. Ms. Blankenhorn said PSEG LI feels that they have a good line of sight, and it would not be prudent for us to go live sooner than January. Mr. Sachs offered another round of feedback from the industry if necessary. Ms. Blankenhorn asked Ms. Iqbal to answer that offer, to which Ms. Iqbal thanked Mr. Sachs and promised to reach out if that becomes necessary, but right now PSEG LI is doing extensive UAT testing in order to handle issues. Ms. Philip added that there will be training scheduled, which she said will be a good avenue for testing the system and is one of the reasons why it is pushed until January. Ms. Philip also said depending on the progress, there is a possibility that PSEG LI can provide feedback to the industry in December or in January about the go live date

2021 Draft Meeting Schedule

Ms. Philip presented the 2021 Draft Meeting Schedule, to which Mr. Sachs said the schedule looks good for now with six meetings minimum. Mr. Sachs said that the schedule will be discussed on an internal industry call, and will get back if anything should be tweaked. Ms. Philip said that by the next meeting, the comments from this meeting will be taken back and it will be good to hear an update from the industry on HCM and IOAP. Mr. Sachs said that the industry has held off for the last few months on the new technical requirements, HCM and IOAP, but will talk more internally and is looking forward to becoming more involved on all of these topics. Ms. Philip expressed that PSEG LI is looking forward to further collaboration as well, and asked if anyone who asked a question in the chat previously still had outstanding questions. Mr. Sachs said everything was addressed. Ms. Philip thanked everyone for their participation and helpful comments, and wished everyone a happy and safe holiday season on behalf of PSEG Long Island.

Meeting Adjourned