

Minutes of the June 30, 2022 Interconnection Working Group (IWG) Meeting

Attendees:

DER Industry/DPS

<u>Name</u>	<u>Company</u>	<u>Name</u>	<u>Company</u>
Dhruv Patel	NYSEIA	William Mayer	ConnectDER
Gregory Sachs	Empower Solar	Nora Lardner	ConnectDER
Steve Foley	Sunrise Power Solution	Santiago Quijano	BlueWave Solar
Jonathan Demay	Bloom	Nafiul Jami	DPS-LI
Carlos Lanza	Harvest Power	Jonathan Knauer	ConnectDER
Lorne Brousseau Colin Mattox	Horizon Solar LLC	Zachary Caruso Thomas Casey	Avangrid Service Co
Colin Mattox	ConnectDER	Thomas Casey	Harvest Power
Gurudatta Belavadi	Boreggo Solar		

PSEG LI/LIPA

<u>Name</u>	<u>Company</u>	<u>Name</u>	<u>Company</u>
Anie Philip	PSEG LI	Amrit Singh	PSEG LI
Steven Genzardi	PSEG LI	Iram Iqbal	PSEG LI
Don Mathew	PSEG LI	Robert Argiro	PSEG LI
Nick Montanaro	PSEG LI	Ali Akgul	PSEG LI
Anthony Gorgone	PSEG LI	Yuri Fishman	PSEG LI
Scott Brown	PSEG LI	Reigh Walling	PSEG LI Consultant
Max Roytman	PSEG LI		
Curt Dahl	PSEG LI		
Jalpa Patel	PSEG LI		
Pete Mladinich	LIPA		

Klint Bynoe	PSEGLI
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Introduction

Mr. Brown opened the meeting by welcoming everyone and conducting a roll call.

IWG Compliance Guidelines

Mr. Brown reviewed the Compliance Guidelines with participants, including expectations, procedures, policies and topics to avoid which are stated in the compliance document.

1. 9:10 PSEGLI to discuss new survey being issued to developers

Mr. Brown introduced a new survey effort by PSEG LI to gather feedback from developers. This survey will be conducted through the Survey Monkey platform. Residential developers will receive a survey at the end of any month they have completed at least one project in, while commercial developers will receive a survey shortly after COD. This survey link will be distributed via email, and is intended to be filled out by the most involved person for that project.

2. 9:20 PSEGLI to discuss new credit card payment provision for payments in SGIP

Mr. Brown discussed the implementation of credit card processing for DER interconnection / CESIR costs. The target implementation date is August 1st – 15th. This will be done through our SGIP website and will require an email address and PAM ID. Mr. Sachs asks what type of payments will be able to be paid through credit card. Mr. Brown responded that all payments can be made by the card. Mr. Fishman noted that there will likely be some upper transaction limit on the credit card processor.

3. 9:30 PSEGLI to discuss its implementation of cost sharing

Mr. Brown stated that PSEG is carefully following the implementation of Cost Sharing 2.0 in other NY utilities to learn from them and avoid any mistakes they may make. He stated that this is currently an internal process, and that the details of PSEG LI's implementation of Cost Sharing 2.0 will not be able to be discussed in detail at this time. By the following IWG meeting, now planned for 9/15/22, a draft of

the tariff will be available and open for feedback. Mr. Brown emphasized that PSEG LI has been reviewing many of the comments on the JU Cost Sharing 2.0, and will be taking them into account.

Mr. Sachs asked where the cost sharing provision will be written – the SGIP document or the tariff itself. Mr. Grassi responded that the SGIP can be considered part of the tariff, so the cost sharing provision will be a part of the tariff. Mr. Sachs asked for details on what differences in implementation of Cost Sharing 2.0 will exist between PSEG LI and the NYS guidelines. Mr. Brown responded that PSEG LI cannot comment at this time, and many things are still being evaluated internally. Mr. Patel asks if there will be an interim queue as is present in the NYS guidelines. Mr. Brown responded that while PSEG LI cannot comment, they are following the most current issues this element may be causing.

4. 09:50 PSEGLI to comment on ConnectDER

Mr. Bynoe comments on behalf of PSEG LI on ConnectDER. PSEG LI sees the value in the product and will be meeting with ConnectDER to further review the implementation. PSEG LI wants to iron out more details before proceeding. Mr. Sachs asks about details of the metering process. Mr. Bynoe describes the data structure of meters and command center of receiving that information, and that integrating ConnectDER into this system is one of the items they are looking into. Mr. Sachs asks if there will be differences in application cost for ConnectDER implementation. Mr. Bynoe: PSEG LI is reviewing this internally, and cannot answer at this time.

5. 10:00 PSEGLI to comment on CESIR Cost Breakdown

Mr. Sachs asked PSEG LI if they can provide a further cost breakdown for upgrade charges, such as breaking the cost into set categories and going over key upgrades, labor and material cost. Mr. Patel presented a brief presentation that shows a sample cost breakdown. Mr. Brown responded and said that it will be difficult to achieve high levels of detail in a cost breakdown. Ms. Iqbal expanded, saying some cost items are included, but the desired level of granularity will be difficult. PSEG LI's low CESIR cost is a result of this. Mr. Sachs asked PSEG LI to publish a catalog showing approximate cost of various types of upgrades, which PSEG has published in the past. PSEG LI responded and will be looking into a cost catalog.

6. 10:10 PSEGLI to give update on IEEE 1547-2018

IEEE 1547-2018 implementation is discussed. Mr. Walling expands on the details of IEEE and how DERs impact power grid. IEEE 1547-2018 Excerpt: "The DER shall provide voltage regulation capability by changes of reactive power. The approval of the Area EPS Operator shall be required for the DER to actively participate in voltage regulation." PSEG plans to be in accordance with IEEE 1547-2018 by the beginning of 2023.

7. Industry presentation on Avangrid Flexible iX

Mr. Caruso presented on flexible interconnection and its benefits, using the pilot project implemented by NYSEG. Two projects were reviewed which utilized a flexible approach. More DER capacity – shows what upgrades are needed from CESIR to enable more DER. Interconnection of DER based on real time meter readings increases capacity without exceeding host capacity. It also provides a waiting list for system upgrades.

Mr. Caruso stated that a number of lessons have been learned through this project. Implementation is set for 2023 pending any delays. Mr. Caruso highlighted lessons learned,

- o Parasitic Curtailment
 - When visibility or control of a Flexible Interconnection site is lost the site must be automatically curtailed to a “fail-safe” level of generation to protect the system
 - When a site is interconnected under a Flexible Interconnection solution, curtailment must be expected from both normal curtailment caused by the targeted system constraint as well as “Parasitic Curtailment” from loss of comms to the site or other malfunction of a system component
 - As the technology matures and we gain more familiarity with the new systems and procedures we expect the amount of “parasitic curtailment” a site can expect to drop
- o Operational Engagement
 - Flexible Interconnection requires greater utility engagement in DER operations compared to DER with static capacity interconnection contracts
 - While DERMS technology allows the DER curtailment to occur automatically, appropriate Operating Procedures (OP) and proper staffing are critical to ensuring smooth operation and proper communication with DER Operators
- o DER Site Controller Interface
 - IEEE 1547-2018 lays out the groundwork for utility to DER communications
 - While progress is being made on implementing these standards at the Inverter level, we have experienced significant deficiencies when communicating to DER Site Control/Data Acquisition systems
 - IEEE 1547-2018 may need to be modified to better accommodate communicating with site control systems for Flexible Interconnections as the standard is focused at the inverter level.
- o Flexible Capacity Potential
 - Based on our experience on Station 113 in Spencerport, NY Flexible Interconnections have the potential to reduce the \$/W required to interconnect new DERs to constrained parts of the system
 - 16.8 MVA static capacity -> 24.2+ MVA static + flexible capacity = 44% increase
 - Constraints that trigger expensive upgrades such as reconductoring, voltage class upgrade, or substation transformer replacement are the most suitable for deferral by Flexible Interconnections

Mr. Montanaro stated that flexible interconnection is good for developers, but there is a possibility for bank failure that will lead to outage if not properly curtailed. He asked who would be responsible in this

scenario. Mr. Caruso answered that that a bank failure scenario would require a large number of concurrent failures, and there are provisions built in to avoid this.

Mr. Singh asks how the data is sent back to the utility. Mr. Caruso responded that the data is managed by a third party contractor and brought back via the contractor. Mr. Singh asks if there are cybersecurity concerns with the system. Mr. Caruso affirms that this is a major priority, and that the systems are designed in such a way where a hacker would not be able to do any major damage.

8. 11:00 Industry to provide high level presentation on flexible iX topics

Mr. Sachs presented a shortlist of topics the industry would like to be discussed at future meetings. Refer to Industry document and list for more information.

Mr. Sachs stated industry looking to get to UK format in the future where there are 3 options for every interconnection project

1. Standard/Full Interconnection w/ upgrades,
2. Reduce interconnection project size or
3. Flex-iX

Mr. Sachs stated that flexible interconnection should be a precursor to grid-scale energy storage, enabling control & monitoring infrastructure required to fulfill market needs.

Mr. Sachs asked if PSEGLI had any pilot projects/programs for similar advanced technologies and where this information can be found.

Mr. Sachs presented on topics of interest:

- o Coms & Technology Platforms, Architecture
 - Current available solutions and platforms
 - DERMS Centralized Architecture
 - DERMS Decentralized Architecture
 - DERMS Hybrid Architecture
- o Curtailment Prediction Analysis and Data Requirements
 - Data Availability and Granularity
 - Method and Assumptions of Analysis
 - Sample Curtailment Analysis from other projects and regions
 - Evidence of Justification when curtailment takes place
- o Financing & Renumeration
 - Project Financial Impact Study
 - CalEdiston Current offering related to Flex IX
 - Curtailment rebate (\$/KW)
 - Hardcap on curtailment
 - Payment for estimated generation loss (\$/KWh)
 - Payment via ESI (Energy Services Interface)
 - Transition to Cost Allocation (CS 2.0)
 - Curtailment Insurance
- o Operating Constraints
 - Feeder/Conductor Thermal Capacity

- Primary Substation Thermal Capacity
- Overvoltage and Undervoltage
- Sub-T/ Transmission Substation Congestion
- Any other plus an N-1 Scenario
- Highly Variable load & Gen profiles
- Protection
- o Pilot/Demo Projects
 - National Grid, NY – Today’s presentation
 - NYSEG (Avangrid) general overview – April ITWG presentation
 - Commonwealth Edison (ComEd) – Went live in 2021
 - NYSEG Pilot – Cellular
 - Pilots in all utility territories – are other utilities working on flexible IX?
- o Rules of Curtailment Selection
 - Last In First Out (LIFO)
 - Physical – Location based
 - Shared or pro rata
 - Economical
 - Time profiled
- o Special, Standards, Etc
 - IEEE 2018-1547 Impacts
 - Planned/ unplanned disconnect
 - UL-1741

9. 11:30 End

Mr. Brown asked for final comments, and some brief final comments were made, and the date of the next meeting was announced to be September 15th, later changed to October 13