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OF NEW YORK

System Data

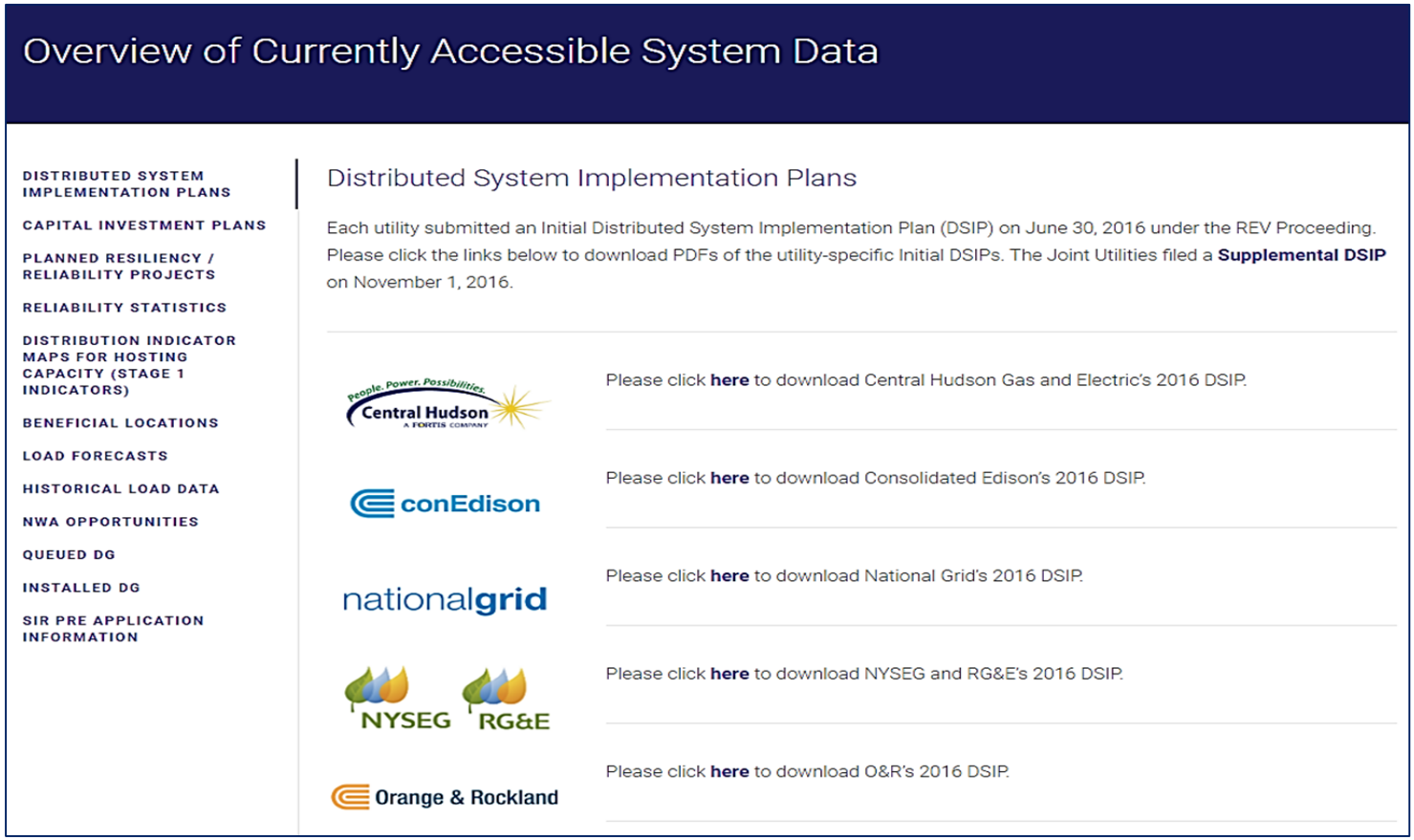
Summary of August 17, 2017 Stakeholder Engagement Group Meeting

August 17 Stakeholder Session Agenda

- Following the April 20th stakeholder engagement session, the JU met with interested stakeholders to dive deeper into use cases for system data
- Objectives of the one-on-one interviews between utilities and third party developers included:
  - Work with stakeholders from the DER development community to better understand how currently available utility system data is being used
  - What additional data or refinements to data or data access might be valuable
  - Gain a better understanding of which types of data – either currently available or additional – are most important to a developer for specific projects
  - Frame the discussion around developer use-case examples
- Constellation, Borrego Solar and Opus One agreed to develop and co-present with the JU 4 specific use cases (UC):
  - UC-1: Interconnection Cost Estimates – Pre-CESIR
  - UC-2: Evaluating Development Risks for Potential Projects
  - UC-3: Microgrid Development
  - UC-4: Integrated Distribution Planning (LMP+D & LNBA)

Joint Utilities of New York System Data Webpage

- The utilities have made selected system data available via the utility web sites. Links to the web sites and data can be found on the JU Website: http://jointutilitiesofny.org/system-data/



Available Resources for JU Useful Information

- The Joint Utilities are working with stakeholders through multiple venues to provide additional information that is readily available and accessible and useful for third parties
- System Data information is available through several useful online resources:
  - JU System Data webpage on the JU website with links to utility-specific system data portals and webpages: http://jointutilitiesofny.org/system-data/
  - Each company maintains a web portal focused on distributed generation, with links to system data information:
    - Central Hudson – Distributed Generation
    - Con Edison – Distribution System Platform
    - National Grid – System Data Portal
    - NYSEG – Distributed Generation
    - RG&E – Distributed Generation
    - O&R – Using Private Generation Energy Resources
  - Hosting Capacity Maps v.2 will be deployed on utility portals on October 1, 2017

Interconnection Cost Estimates – Pre-CESIR
&
Evaluate Development Risks for Potential Projects

UC-1: Interconnection Cost Estimates – Pre-CESIR

Description: Developers want to estimate CESIR[1] results as a project risk analyses (interconnection costs and timeline for potential system modifications). With CESIRs costing from $5,000-$25,000, a developer's engineers may be able to review utility-provided information to make an informed and reasonably accurate assessment of what the CESIR cost and timeline outcome might be and whether or not it would be cost-effective to go forward with the CESIR and the project.

Information requested	Why

Need to Have –
• (GIS) – Substations.
  • Unique Identifier and/or Substation Name
	• Not all utilities have online mapping
	• Need to be able to cross reference data from all different sources with mapping tools
	  • Allow tying GIS to Interconnect list

Need to Have --
• (GIS) – Distribution & Transmission lines (OH/UG)
  • Circuit ID
  • Substation ID/Substation Name
	• Allow GIS data to be tied back to substation
	• Use GIS data to complete spatial analysis with developer customer data.

Nice to Have -- • Distribution/Transmission line attributes • Conductor Size	• Can be used to evaluate potential thermal capacity of feeder and estimate re-conductoring costs, if necessary

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[1]*Coordinated Electric System Interconnection Review*

UC-1: Interconnection Cost Estimates – Pre-CESIR

Description: Developers want to estimate CESIR[1] results as a project risk analyses (interconnection costs and timeline for potential system modifications). With CESIRs costing from $5,000-$25,000, a developer's engineers may be able to review utility-provided information to make an informed and reasonably accurate assessment of what the CESIR cost and timeline outcome might be and whether or not it would be cost-effective to go forward with the CESIR and the project.

Information requested	Why

Nice to Have --
• (GIS) – Transformers
  • Circuit ID
  • Peak Load and/or percent capacity load attributes
	• Transformer locations with existing capacity will allow more accurate modeling of circuit load requirements.

Nice to Have -- • Utility Fault Current Contribution and Impedance @ PCC	• Can be used to evaluate necessity of system upgrades • With some utilities requiring specific grounding transformer sizing to meet effective grounding requirements, this information is critical to performing those calculations

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[1]*Coordinated Electric System Interconnection Review*

NYSEG nationalgrid Orange & Rockland Rockland Electric Company conEdison Central Hudson A FORTIS COMPANY RG&E

UC-2: Evaluate Development Risks for Potential Projects

Description: Developers need system data to estimate and understand development risks for potential future projects in various locations on the utility system versus searching for a specific buyer for a project. Interconnection costs tend to be the largest variable for project viability. Developers generally don't have difficulty finding off-takers/buyers for a projects that have manageable interconnection costs.

Information requested	Why
Nice to Have -- • Load Forecast	• Can be broadly used to identify areas where there may be other locational based benefits to siting projects
Nice to Have -- • Substation and Transmission Line Mapping	• Potential to evaluate projects that are not viable as distributed generation as potential transmission level interconnections

UC-1 & UC-2: Data Availability Status

Data Element	Currently Available?	Potential Availability?*	Notes & Potential JU Actions
Min/Max/Avg Load Data at Feeder, Network and Substation Levels	Yes		Historic load data available in via JU Website links to utility portals. Granularity, periods and availability varies by utility
DER Already Connected	Yes		Available via JU Website links to DPS SIR Inventory site. Will be included in Hosting Capacity Maps v 2.0 on October 1, 2017
CESIR Pre-Application Report Information (provided with Preliminary CESIR)	Yes		Available in the CESIR Pre-Application process which has an associated fee. Availability of individual data elements varies by utility
SIR Inventory Information (to include application status of interconnections in the inventory)	Yes		Available via JU website links to Department of Public Service SIR data inventory page
Conductor Size	No	L	Embedded in planning models and not readily available for public presentment
Utility Fault Current Contribution and Impedance @ PCC	No	L	Embedded in planning models and not readily available for public presentment
Circuits identified by ID # on mapping tools	Yes		Granularity and availability varies by utility. Utilities plan to have similar presentation in Hosting Capacity Maps v 2.0 on October 1, 2017.
Load Forecast	Yes		Available via JU Website links to utility portals. Granularity and availability varies by utility.
Substation and Transmission Line Mapping	No	L	Third parties will need to go through process for interconnection. Not planned for Hosting Capacity presentment

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*low, medium, high

NYSEG nationalgrid Orange & Rockland Rockland Electric Company conEdison People. Power. Possibilities. Central Hudson A FORTIS COMPANY RG&E

Microgrid Development

UC-3: Microgrid Development

Description: It is very easy to access information if you are working with an individual customer (transmission or distribution). When determining a good place for microgrid planning, it becomes more difficult to access the data. This use case looks more holistically at microgrid development outside of the RFP space where it is harder to access data than when planning for T&D system. Third parties are looking for access to data to locate areas that would be conducive to microgrid development.

Information requested	Why
Need to Have -- • Distribution substations and circuits on a GIS mapping server • 8760 hourly load shape data at the feeder level (as available) • Feeder peak load data (time and peak) for the past five (5) years • Forecasted feeder peak load data for the next five (5) years • One-line diagrams with protection equipment and conductor types indicated • Feeder outage metrics (hours/year, customers impacted) • Planned distribution upgrades	• Geolocation data required to understand location of feeders, substations relative to customer, physical constraints • Load shape required to understand duration of peak, off-peak periods • One-line diagrams required to understand currently installed utility equipment, potential interaction/coordination with potential solutions; identify other limiting equipment on the distribution system • Reliability metrics required to identify potential areas for development and understand scope of proposed solutions • Knowledge of planned upgrades required to understand future growth, mitigate potential overlap of utility/developer solutions
Nice to Have -- • 8760 hourly load shape data at the feeder level (5 year history) • Distribution load flow models (provided to developers through executed CEII-NDAs)	• Broader dataset gives insight into potential for peak load changes, shifts in time, magnitude • Load flow models provide more visibility into issues

UC-3: Data Availability Status

Data Element	Currently Available?	Potential Availability?*	Notes & Potential JU Actions
Distribution substations and circuits on a GIS mapping server	Yes		Currently available on some utility system data portals. Will be part of Hosting Capacity v.2 implementation in Oct. 2017.
8760 hourly load shape data at the feeder/network level (as available)	Yes		Historic load data available via JU Website links to utility portals. Granularity, periods and availability varies by utility.
Feeder/network peak load data (time and peak) for the past five (5) years	Yes		Historic load data available via JU Website links to utility portals. Granularity, periods and availability varies by utility.
Forecasted feeder/network peak load data for the next five (5) years	Yes		Forecast load data available in via JU Website links to utility portals. Granularity, periods and availability varies by utility.
One-line diagrams with protection equipment and conductor types indicated	No	L	This data is not made generally available for public access. No plans to make this available at this time.
Feeder outage metrics (hours/year, customers impacted)	Yes		Available via the JU website links to utility specific annual reliability reports.
Planned distribution upgrades	Yes		Planned capital work available via the JU website to utility portals.
Distribution load flow models (provided to developers through executed CEII-NDAs)	No	L	Network models not planned to be made generally available on request, even under NDA. Potentially available under a negotiated contract scope of work, but not for general or specific opportunity prospecting or project proposal development.

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*low, medium, high

Integrated Distribution Planning (LMP+D & LNBA)

UC-4: Integrated Distribution Planning (LMP+D & LNBA)

Description: Market stakeholders like Opus One would like to be able to use an integrated distribution planning solution approach to help both utilities and/or DER developers assess locational net benefits of DERS.

Information requested	Why
Need to Have – network models • Access to network models (Can be on a contract basis)	• Required to calculate locational net benefit analysis to understand location of feeders, substations relative to customer, physical constraints, grid limits and layout

Nice to Have – load and generation data
• Forecasted data for load and DER growth
• Historic SCADA data from feeders/substations
  • Current
  • Voltage
  • 3-phase
  • LMP node pricing
	• Bottom up or top down forecast data is required to understand how locational net benefits for DERs will change
	• Scenario analysis on forecasted data allows the long-term evaluation of LNBA and development on LMP+D pricing
	• Provides visibility for DER developers as to where NWA investments are opportune based on forecasted LNBA and LMP+D pricing
	• Forecasting could be brought in through third party providers but would prefer utility forecasts to be synced with utility expectations
	• Historic data provides trends in LMP+D pricing and an as-is LNBA analysis

Nice to Have -- • Customer information	• The availability of customer information (type of customer, interconnection capacity, load profiles) will help the evaluation

UC-4: Data Availability Status

Data Element	Currently Available?	Potential Availability?*	Notes & Potential JU Actions
Access to network models (Can be on a contract basis)	No	L	Network models not planned to be made generally available on request, even under NDA. Potentially available under a negotiated contract scope of work, but not for general or specific opportunity prospecting or project proposal development.
Forecasted data for load	Yes		Forecasted load data available in via JU Website links to utility portals. Granularity, periods and availability varies by utility.
Forecast data for DER growth	No	M	Forecast approach and process under development and under discussion by the JU Forecasting Working Group
Historic SCADA data from feeders/substations • Current • Voltage • 3-phase	No	L	SCADA data is not made public. Generally used for operations. Often highly granular. Historic information may not be saved at origination granularity.
LMP node pricing	No	M	Equivalent data may be part of VDER 2

*low, medium, high

Key Stakeholder Feedback from August 17 Session

Stakeholder Input	Discussion Points	Next Steps
Stakeholders requested the results of the one-on-one conversations between stakeholders and the JU be posted publically online to avoid complications with anti-trust laws	• The use cases were co-presented with stakeholders and the JU for discussion with the broader group • The JU agreed that the use case materials as presented in the Stakeholder Engagement Session would be posted as part of the meeting summary deck on the JU website	**Closed** – The results of the stakeholder one-on-one conversations are included in this presentation deck as they were presented to the broader stakeholder group
It was suggested that the door stays open for third parties to provide in-depth modeling and analytics for LMP or LNBA as they have the expertise and opportunities to do so	• The JU clarified that NDAs or other formal agreements would be necessary for this data to be made available and would be available only in a utility facing contract or service. The JU are not ready at this time to provide the load flow models for developers to use outside of a utility facing effort (such as for developer use or customer facing). The JU does not plan to provide this data publically.	**Open** – The Joint Utilities are willing to continue discussions with third party developers and DPS Staff for utility facing use cases and possibly developer/customer facing use cases.

Key Stakeholder Feedback from August 17 Session

Stakeholder Input	Discussion Points	Next Steps
Some stakeholders found the one-on-one conversations valuable as a forum to provide direct input and discuss the availability of the information requested from the JU perspective	• The broader stakeholder meeting following the one-on-one conversations provided transparency into the process and provided the forum for interested stakeholders to explore and/or question the specific information within the use cases or provide a different perspective	**Closed**
Some stakeholders found the one-on-one conversations valuable as a forum to provide direct input and discuss the availability of the information requested from the JU perspective	• Some stakeholders agreed that there are a number of related/relevant conversations going on in different venues (JU DSP Hosting Capacity WG, Interconnection Technical WG, DER Sourcing). The group agreed that system data work should not duplicate or conflict with these discussions and availability of some system data requested may being addressed in those forums. • Stakeholders commented that they would investigate those other forums for potential involvement	**Closed**

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