



# Welcome to Queue Cluster 12

Thursday, March 28, 2019

# Purpose of this Meeting

- SCE offers this Workshop to help you understand our Generator Interconnection Procedures, specifically how to properly submit an Interconnection Request.
- Should there be discrepancies between this workshop and SCE's tariffs, SCE's tariffs and interconnection documents prevail.
- We will not discuss specific details about your individual project (e.g., recommended project size, POI, expected costs, etc.)

# Queue Cluster 12 Workshop Ground Rules

- Please mute your phone, and please do not place your phone on hold
- Please note: members of SCE's Energy Marketing Team may be in the audience
- For Questions:
  - Please submit them via Skype text (located at bottom left corner of your screen). We will try to answer them throughout the Workshop.
  - Questions that are not answered during the meeting will be answered via email after the Workshop.
  - If you have more questions after the Workshop, please submit them to:  
[InterconnectionQA@sce.com](mailto:InterconnectionQA@sce.com)

# Your SCE Workshop Hosts

## Organizations

Grid Interconnection & Contract Development

Customer Interconnection / Method of Service

Engineering

Integrated System Planning

And other technical experts

# Agenda – “WDAT” QC12

- Completing the Interconnection Request (IR) 15 min
- Demonstrating Site Exclusivity 15 min
- Submitting Technical Documents 15 min
- Wholesale Distribution Service Request 5 min
- Required Deposits 10 min
- Generating Facility Charging Demand Study 5 min
- Quick Tips 5 min
- Important Dates & Links 10 min
- Q&A 20 min
- Workshop ends 11:30 am

# WDAT IA vs. DSA vs. PPA

- Wholesale Distribution Access Tariff (WDAT) Interconnection Agreement (IA)
    - Allows Developers to **interconnect** their project to SCE's distribution system
  - Wholesale Distribution Service Agreement (DSA)
    - Allows Developers to **transmit** electrons through SCE's distribution system
- 
- Power Procurement Agreement (PPA)
    - **Selling** your power to a buyer (SCE, PG&E, SDG&E, etc.)
    - Not part of today's focus

# WDAT Interconnection Request Checklist

- ☑ Completed Interconnection Request, with all requested technical data
  - ☑ Single-Line Electrical Diagram (33 kV and below must be stamped by a Professional Electrical Engineer)
  - ☑ Site/Plot Plan Diagram
  - ☑ Proof of Site Exclusivity, or In-Lieu Deposit (\$100,000  $\leq$  20 MW or \$250,000 > 20 MW)
  - ☑ Diagrams, manufacturer's data, and written descriptions of the generating facilities
- ☑ Study Deposit: \$50,000 plus \$1,000/MW, up to \$250,000 maximum
  - Submit your Study Deposits separately by following the payment instructions
- ☑ Completed Wholesale Distribution Service Request Form
  - Request for Distribution Service is a separate application for WDAT requests (see Section 15.2 of WDAT)
- ☑ Submit your Battery Energy Storage System (BESS) form (if applicable)

# Interconnection Request (IR) Forms

## WDAT Distribution Interconnections

- WDAT IR form, Payment Instructions, and request for Distribution Service can be found on the SCE portal:
  - [www.SCE.com](http://www.SCE.com) > Your Business > Generating Your Own Power > Grid Interconnections > Wholesale Distribution Access Tariff (WDAT) > Initiating a Request for Interconnection Under The GIP > Appendix 1 – Interconnection Request for a Generating Facility
  - Shortcut: [Appendix 1 & Attachment A to GIP](#)

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## CAISO Transmission Interconnections

(Note: SCE does not accept CAISO Interconnection Requests)

- CAISO Interconnection Request details:
  - <http://www.caiso.com/planning/Pages/GeneratorInterconnection/InterconnectionRequest/Default.aspx>

Uncertain as to which Tariff to apply to? Send your proposed Point of Interconnection information to [InterconnectionQA@sce.com](mailto:InterconnectionQA@sce.com)



# Where to Submit Your Interconnection Request

Send the completed IR and technical documents to SCE via one of the following:

☑ **Email:** [grid.interconnections@sce.com](mailto:grid.interconnections@sce.com)

(Preferred)

☑ **Snail Mail:** Southern California Edison Company  
Director of Grid Contracts Origination & Operations  
P.O. Box 800  
Rosemead, CA 91770

☑ **Overnight:** Southern California Edison Company  
**Attn: GICD - IP&C - GO-1, Q4C**  
2244 Walnut Grove Ave  
Rosemead, CA 91770  
909-274-1106

(This is not  
for payments)

Failure to include the "Attn:" line may result in your package being returned to you

Send Study Deposits to SCE per payment instructions.

More information about how to receive payment instructions will be explained later in the presentation

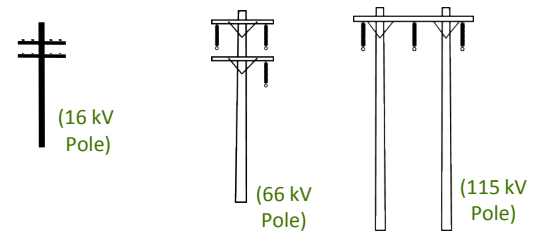
# Guidelines for Sizing Your Generating Facility

- Distribution Circuits typically loaded to 460 Amps for reliability and operation of the system. For example, at 12 kV, 460 amps is 10 MWs.
- During the Scoping Meeting, Field Engineering will provide system conditions and limitation so that the project's size can be adjusted.
- Maximum Generation is subject to change based on queue generation and reliability constraints
- Sizes may differ based on adding energy storage due to Circuit/Substation loading.

# Grid Voltages – WDAT vs. TOT

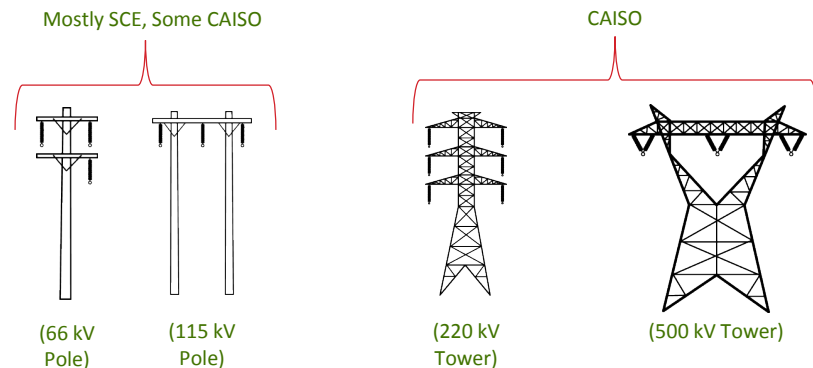
- SCE's distribution system = SCE controlled = WDAT

- 4 kV – 16 kV: residential circuits
- 16 kV – 33 kV: city/industrial circuits
- 55 kV – **115 kV**: sub-transmission



# Grid Voltages – WDAT vs. TOT

- SCE's transmission system = CAISO & SCE controlled
  - 220kV & 500 kV jurisdiction fall under applicability of the CAISO Tariff
    - Interconnection Requests must be sent to the CAISO
  - Majority of the 66kV and 115kV system is under SCE control
    - Some exceptions do apply
    - If Interconnection Request is to the CAISO controlled grid, the project must apply to the CAISO and **not** SCE
    - A list of CAISO controlled 55kV, 66kV, and 115kV facilities is available and can be provided on request



# Sample Completed IR

- sample application

# CAISO/WDAT Deliverability Options

## Deliverability

Defined as the annual Net Qualifying Capacity of a Generating Facility, as verified through a Deliverability Assessment and measured in MW, which specifies the amount of resource adequacy capacity the Generating Facility is eligible to provide.

You must select one:

- Energy Only Deliverability Status
  - Avoids cost of delivery network upgrades
  - Cannot qualify as a Resource Adequacy resource in PPA
- Full Capacity Deliverability Status
  - Allocated delivery network upgrades in interconnection studies
  - Can qualify as a Resource Adequacy resource in PPA
- Partial Capacity Deliverability Status
  - Allocated delivery network upgrades in interconnection studies
  - Can qualify as a Resource Adequacy resource in PPA

All options/selections/choices are subject to curtailment

# Annual Deliverability Assessment Option

- During a Cluster Window, SCE also accept requests for Annual Full Capacity Deliverability. A Generating Facility previously studied as Energy-Only Deliverability Status (and has an executed Interconnection Agreement) will have an option to determine whether it can be designated for Full Capacity Deliverability Status or Partial Capacity Deliverability Status. (See GIP Section 4.7.)
  - Includes: an Option (A) Generating Facility not allocated TP Deliverability Status, has a GIA in good standing, and desires to seek additional Deliverability with respect to the Energy-Only Deliverability Status portion of the Generating Facility; and (iii) an Option (B) Generating Facility which chose Partial Capacity Deliverability Status and has a GIA in good standing, and desires to seek additional Deliverability with respect to the Energy-Only Deliverability Status portion of the Generating Facility.
  - Requires: (i) a completed Interconnection Request, including requested Deliverability status, preferred Point of Interconnection and voltage level, and all other technical data, and (ii) a non-refundable \$10,000 study fee.
- CAISO performs this study

# Demonstrating Site Exclusivity

- Read and follow SCE's Guidelines for Demonstration of Site Exclusivity: [Site Exclusivity Guidelines](#)
- Reminders:
  - Please include Assessor's Parcel Number (APN) along with your project's GPS coordinates on your IR form
  - In lieu of providing proof of Site Exclusivity, you may submit a Site Exclusivity Deposit of \$100,000 for a Small Generating Facility ( $\leq 20$  MW) or \$250,000 for a Large Generating Facility ( $> 20$  MW)
  - If your site exclusivity documentation is not ready, we encourage you to send in a Site Exclusivity Deposit; we pay interest from date of receipt and you don't risk missing the cluster deadlines



# APN Needs to Appear on Both Documents

## Sample Site Exclusivity Document

Recording Requested by:  
Jane Doe

And when recorded, mail the instrument and tax statements to:  
Jane Doe  
123 Street  
Edisonville, CA

Deed/Lease/Option Document label

APN: 123-456-78910

For a valuable consideration, receipt of which is hereby acknowledged,  
Jane Doe, a single woman  
Hereby (grants/leases/provides option to lease or purchase) to: Jane Doe and John Doe  
As joint tenants  
The following real property in the City of Edisonville, County of Los Angeles, California:  
Lot 00 of XYZ Addition to the City of Edisonville, as delineated on the map of said addition, recorded  
01/01/2001, in Book 62, Page 013065

If Lease/Deed/Option, add terms here which should be through a specific DATE (which may include an  
expiration date) such as 3/15/2020

Name of Legal Entity: Jane and John Doe

Date \_\_\_\_\_ Signature: signature  
Date \_\_\_\_\_ Signature: signature

State of California  
County of \_\_\_\_\_  
On \_\_\_\_\_

## Interconnection Request Form

4. Interconnection Customer provides the following information:

a. Address or location, including the county, of the proposed new Generating Facility site (to the extent known) or, in the case of an existing Generating Facility, the name and specific location, including the county, of the existing

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Generating Facility:

Project Name: \_\_\_\_\_

Project Location: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City, State: \_\_\_\_\_, \_\_\_\_\_  
County: \_\_\_\_\_  
Zip Code: \_\_\_\_\_  
GPS Coordinates: \_\_\_\_\_

Please put your APN number on the Interconnection Request form, section 4. a. and include acreage.

# Lease/Option Date Must be Through COD

## Sample Site Exclusivity Document

Recording Requested by:  
Jane Doe

And when recorded, mail the instrument and tax statements to:  
Jane Doe  
123 Street  
Edisonville, CA

Deed/Lease/Option Document label

APN: 123-456-78910

For a valuable consideration, receipt of which is hereby acknowledged,  
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The following real property in the City of Edisonville, County of Los Angeles, California:  
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If Lease/Deed/Option, add terms here which should be through a specific DATE (which may include an expiration date) such as 3/15/2020

Name of Legal Entity: Jane and John Doe

Date \_\_\_\_\_ Signature: signature  
Date \_\_\_\_\_ Signature: signature

State of California  
County of \_\_\_\_\_  
On \_\_\_\_\_

## Interconnection Request Form

d. Proposed In-Service Date, and Other Key Dates (Month/Day/Year) (Dates must be sequential)


Requested Back-Feed Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Proposed In-Service Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Proposed Trial Operation Date: \_\_\_\_/\_\_\_\_/\_\_\_\_  
Proposed Commercial Operation Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

The term of the site document should be, at a minimum, through the Commercial Operation Date

## Interconnection Request Form

10. This Interconnection Request is submitted by:

Legal name of Interconnection Customer: \_\_\_\_\_

By (signature):  \_\_\_\_\_

Name (type or print): \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

The legal name of the Interconnection Customer on the application should tie to the legal entity in the site exclusivity document

# Required Technical Documents

- **Single Line Diagram** (33 kV and below must be stamped by a Professional Electrical Engineer) [Sample SLDs & Plot Plans](#)
- **Plot Plan** (A diagram which shows the buildings, utility runs, and equipment layout, the position of roads, and other constructions of an existing or proposed project site at a defined scale)
- **Site Drawing** (Shows generator project location and Point of Interconnection with the SCE's Distribution System, and GPS coordinates of the Customer's protective device)
- **Detailed technical data regarding your equipment chosen** (Manufacturer specifications and diagrams on inverters, power system controls, etc. plus descriptions of the generating facilities)
- **Battery Energy Storage System (BESS) Technical Data** (if applicable)
  - [Battery Storage Form](#)

For ease of administration, we prefer receiving digital application documents in lieu of hard copies at: [Grid.interconnections@sce.com](mailto:Grid.interconnections@sce.com)

# Smart Inverter Requirements

- Pursuant to the CPUC resolution E-4920 and E-4898 new interconnection requests will require UL-1741 SA certification with **reactive power priority** for smart inverters.
- In addition, smart inverters must have the capability to perform Phase 3 Advanced Functions 5 & 6.
- It is the responsibility of the customer/installer/contractor to purchase equipment which meets all requirements including the new requirements adopted in E-4920 and E-4898.
- For more information, the California Energy Commission (CEC) has a website dedicated to the [Rule 21 Smart Inverter Working Group](#) or you may send an email to [InterconnectionQA@sce.com](mailto:InterconnectionQA@sce.com)

# Smart Inverter Requirements

- IEEE Std.1547 is relevant only to distribution connected resources
  - Does not apply to resources connected to the transmission or subtransmission system
  - Numerous changes to the original 2003 standard
- While inverter manufactures may need to meet the requirements of IEEE 1547, BES resources are still subject to NERC Reliability Standards
- Existing inverters have been historically designed with distribution requirements in mind
  - While appropriate for distribution resources, this can lead to momentary cessation on the BPS which is not the intent
  - Investigations such as those into the Blue Cut Fire suggest that one root cause may have been the misapplication of IEEE 1547
- Further information regarding IEEE Std.1547 and NERC Guidelines related to inverter based resources can be found at:
  - <https://standards.ieee.org/standard/1547-2018.html>
  - [https://www.nerc.com/comm/OC\\_Reliability\\_Guidelines\\_DL/Inverter-Based\\_Resource\\_Performance\\_Guideline.pdf](https://www.nerc.com/comm/OC_Reliability_Guidelines_DL/Inverter-Based_Resource_Performance_Guideline.pdf)

# Wholesale Distribution Service Request

- Wholesale Distribution Service Request (recommend submitting with IR)
    - “An Eligible Customer requesting service under the Tariff must submit an Application, with a deposit of \$2.00 per anticipated average monthly kilowatts of Generation or Wholesale Distribution Load, **except that the deposit shall be waived for an Eligible Customer that contemporaneously submits with its Application a valid interconnection request and associated deposit or fee for the Resource associated with such Generation,\*** to the Distribution Provider as far as possible in advance of the month in which service is to commence.”  
(Section 15.2 of the Wholesale Distribution Access Tariff)
    - Link: [Wholesale Distribution Service Request Form](#)
- \* Tariff revision accepted by FERC effective May 30, 2018

# Submitting Deposits

- Cluster Study Process Deposit
  - \$50,000 plus \$1,000 per MW of electrical output of the generating facility (or the increase in electrical output of the generating facility) rounded up to the nearest whole MW, up to a max of \$250,000.
- Site Exclusivity Deposit (optional)
  - In lieu of providing proof of Site Exclusivity, you may submit a Site Exclusivity Deposit of \$100,000 for a Small Generating Facility ( $\leq 20$  MW) or \$250,000 for a Large Generating Facility.

Please don't send checks with your application documents – send us a request for payment instructions. The instructions will let you know how to send the payment to SCE's Accounts Receivable separately from the documents. [Link: Request for Payment Instructions](#)



- After submitting payment, send us an email providing wire confirmation or check tracking number to: [Grid.Interconnections@sce.com](mailto:Grid.Interconnections@sce.com)

## Generating Facility Charging Demand Study

- SCE's interconnection studies will continue to provide preliminary analysis regarding "as available" charging capacity without identifying incremental system upgrades on its Distribution System.
- Customers have the option for a Generating Facility Charging Demand Study (Firm Charging Study). Purpose: Identify upgrades to SCE's Local Distribution System necessary to for charging demand service comparable service provided to Load Customers under SCE's Wholesale Distribution Access Tariff (WDAT).
- Details regarding the integration of the Firm Charging Study approach into SCE's WDAT Generator Interconnection Procedures have yet to be finalized and filed with FERC.



# Quick Tips

- Review our FAQ → [FAQ Link](#)
- If you receive a deficiency notice on your IR, please respond quickly, and only revise the sections as requested by SCE.
- Apply Early!
  - The sooner your apply, the sooner we can respond to you with correction requests, if necessary. **Drop dead date = Tuesday, April 30th! \***

**\* CAISO QC12 window closes April 15!**

# Important Dates/Milestones

*Due Dates	Milestones
Tuesday, April 30	Last day to submit QC12 applications. PLEASE do not wait until the last day!
Wednesday, May 29	Latest/last day for the IC to <u>submit</u> corrected info (20 BDs after close of cluster window) [See GIP Attachment I Sections 4.2.2.1 and 4.2.2.2]
June 5	SCE last day to review and determine deemed complete/deemed deficient (5 BD review)
By July 1	Hold Scoping Meetings (no later than 60 CDs after close of cluster window)
By July 31	Execute Cluster Study Process Agreement (no later than 30 CDs after Scoping Meeting)
July	Start Phase I Study
January	Publish Phase I Study Report (170 Calendar Days after start of the Phase I Study)
February 2020	Hold Phase I Results Meetings
May 2020	Start Phase II Study

\*Note: Dates shown above could shift based on coordination with CAISO efforts.

# Important Links

## Website

- [SCE's WDAT](#)
- [SCE's Energy Procurement](#)

## Forms

- [WDAT Interconnection Request \(Appendix 1, Attachment A, & request for payment instructions\)](#)
- [Wholesale Distribution Service Request form](#)
- [Battery Storage Form](#)
- [CAISO Interconnection Request Details](#)

## Guidelines / Examples / Questions

- [Site Exclusivity Guidelines](#)
- [Distribution Resources Plan External Portal \(DRPEP\)](#)
- For questions on Interconnection Issues: [InterconnectionQA@sce.com](mailto:InterconnectionQA@sce.com)
- Send completed Interconnection Requests to: [Grid.interconnections@sce.com](mailto:Grid.interconnections@sce.com)
- This presentation to be added to SCE's web site
- [CAISO Interconnection Requests \(Including Prohibited Project Names\)](#)

# What Questions Do You Have?

