



Generator Interconnection Process Workshop July 21, 2011

Meeting Ground Rules

- Please place your phone on mute, and do not place your phone on hold.
- During the presentation, please send your questions via WebEx Chat and we will attempt to answer them during the WebEx.
- If your question is of a technical nature that is specific to your project, you may send it to SCE's InterconnectionQA@sce.com mailbox. Please note: some questions cannot be answered until a study is performed.
- Today's presentation will be emailed to all attendees, and can also be found at the following web address:
www.sce.com/AboutSCE/Regulatory/openaccess

SCE Grid Interconnection Workshop

- The purpose of each Workshop is to provide a forum to improve your understanding of the interconnection process, and to get your questions answered.
- Meeting Facilitator
 - Tim Callaway, Project Manager
- Today's Presenters
 - Drew Brabb and Gary Holdsworth
 - Managers - Grid Interconnection & Contract Development

Overview of Wholesale Generation Interconnection Process



Transmission Interconnections

- Governed by California Independent System Operator Corporation (CAISO) Tariff
 - Transmission interconnections are generally for 115 kV and higher
 - All applications must be submitted to the CAISO
 - CAISO administers its tariff, which is approved by FERC

Distribution Interconnections

- Governed by SCE's Wholesale Distribution Access Tariff (WDAT)
 - Distribution interconnections are generally below 66 kV
 - All applications must be submitted to SCE
 - SCE administers its tariff, which is approved by FERC

Interconnection Study Process Tracks

Cluster Study Process

- Default study process
- No size limit
- Studies groups of electrically-related generation
- Cost of upgrades allocated among group based on contribution
- Deliverability options

Features

- 2 open windows per year (3/1-3/31 and 10/15-11/15)
- One study cycle per year – 2 Phases
- Study deposit: \$50,000 plus \$1,000 per MW; Max \$250,000
- 3-step security postings
 - Between Phase I and II
 - After Phase II
 - At Start of Construction

Independent Study Process (ISP)

- CAISO test for electrical independence
- SCE test for electrical independence
- No size limit
- Deliverability options (deliverability assessed in cluster study process)

Features

- Apply any time of year
- System impact study and facilities study
- Study deposit: \$50,000 plus \$1,000 per MW; Max \$250,000
- 3-step security postings
- Deliverability assessment performed in cluster study process

Fast Track Process

- Screening process to determine eligibility
- Limited to 2MW or less on distribution system, 5MW or less on transmission system
- Customer options meeting and supplemental review if fail Fast Track screens
- Energy-only deliverability status

Features

- If pass screens, go directly to interconnection agreement
- If fail screens, options meeting to evaluate
 - Changes to generation facility
 - Changes to distribution system
 - Or resubmit to ISP or cluster

What Constitutes a Complete Application?



- Completed Interconnection Request, with all requested technical data
- Site Plan Diagram
- Single Line Electrical Diagram
- Site Exclusivity documentation, or In-Lieu Deposit of \$100,000 for <20 MW, \$250,000 for > 20 MW
 - Note: Site Exclusivity required for ISP or Fast Track, no in-lieu deposit available
- Study Deposit:
 - For Cluster Study Process and Independent Study Process: \$50,000 plus \$1,000/MW up to \$250,000 maximum
 - For Fast Track: Processing Fee of \$500, Study Deposit of \$1,000
- Request for Distribution Service is separate application for WDAT requests (see Section 15.2 of WDAT)
- Lack of site exclusivity documentation and lack of technical data are typical reasons for triggering a deficiency notice

Interconnection Requests



Transmission Interconnections

- <http://www.caiso.com/docs/2002/06/11/2002061110300427214.html>
- The Interconnection Request form can be found on the CAISO website under the heading “Current Process for New Generation Projects, Effective December 19, 2010”

Distribution Interconnections

- Fillable interconnection Request form can be found here:
www.sce.com/AboutSCE/Regulatory/openaccess
- Send completed Interconnection Request form along with deposit, Site Plan, Site Exclusivity documentation, and Single Line Diagram to grid.interconnections@sce.com or mail to:

Southern California Edison Company
Director of FERC Policy & Contracts
P.O. Box 800
Rosemead, CA 91770

Deliverability Options (select one)

- Energy Only Deliverability Status:
 - Avoids delivery network upgrades
 - Cannot qualify as Resource Adequacy resource
- Full Capacity Deliverability Status:
 - Allocated delivery network upgrades in interconnection studies
 - Can qualify as Resource Adequacy resource
- Both subject to curtailment in emergency situations

Scoping Meeting



Scoping Meeting is designed to provide the Interconnection Customer:

- Ensure common understanding of Interconnection Customer's project
- Ensure understanding of Generator Interconnection Procedures
- Come to agreement on Point of Interconnection and generator size
 - SCE will provide technical system details, limitations, and information regarding earlier queued projects
- Outline general study process steps for track chosen by Interconnection Customer and discuss alternative study tracks that might be available
- Outline next steps

5 Business Days (3BD CAISO) after Scoping Meeting, the Developer must:

- Provide confirmation on the Point of Interconnection
- Provide confirmation on Generator Size

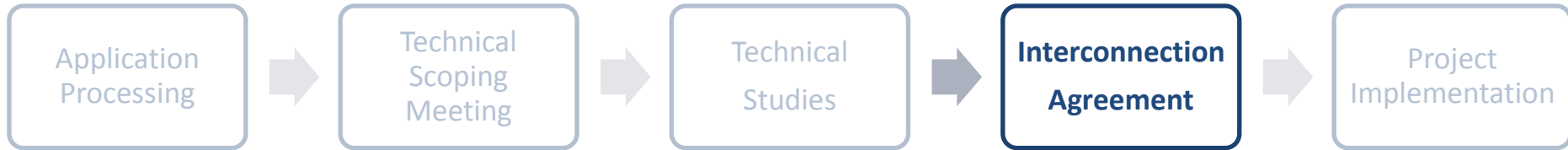
Scope of Interconnection Studies



Technical Studies are intended to provide:

- Impact of generation on SCE's electric system and/or CAISO grid
- Scope of facilities required to ensure the safety, reliability, and integrity of the grid:
 - Interconnection Facilities
 - » Generator-specific facilities required for interconnection
 - Distribution Upgrades
 - » Upgrades to the Distribution System required by Generator or Cluster
 - Network Upgrades
 - » Upgrades to the Network (CAISO Controlled Grid) triggered by Generator or Cluster
- Cost Estimate for required facilities and duration of expected construction

Interconnection Agreement (IA)



- Interconnection agreement negotiations commence following completion of studies or successful eligibility for Fast Track status
- Interconnection Agreement is a contract that sets forth the requirements for interconnection, including:
 - scope of required facilities
 - interconnection facilities
 - distribution upgrades
 - network upgrades
 - operational requirements
 - financial responsibility for such facilities
 - required income taxes, financial security, milestones, and other important information
- Interconnection agreements are executed by all parties and filed for acceptance by FERC
- Can be filed unexecuted

Financial Security Formulas

- First Posting for Network Upgrades: 90 calendar days after Phase I study
 - For Generators over 20 MW, the LOWER of:
 - 15% of total cost responsibility outlined in Phase I study
 - \$20,000 per MW
 - \$7.5 million
 - For Generators 20 MW and under, the LOWER of:
 - 15% of total cost responsibility outlined in Phase I study
 - \$20,000 per MW

Financial Security Formulas (cont'd)

- Second Posting for Network Upgrades: 180 calendar days after Phase II study
 - For Generators over 20 MW, the LOWER of:
 - 30% of total cost responsibility outlined in the Phase I or Phase II study, whichever is lower
 - \$15 million
 - For Generators 20 MW and under, the LOWER of:
 - 30% of total cost responsibility outlined in the Phase I or Phase II study, whichever is lower
 - \$1 million
- Final Security Posting
 - 100% of Network Upgrades, Distribution Upgrades, and/or Interconnection Facilities at start of construction of said facilities

Project Implementation



- After execution of Interconnection Agreement, SCE and Interconnection Customer commence engineering and designing, procuring, and constructing their respective generating and interconnection facilities/upgrades
 - SCE will be responsible for engineering/design, procurement, and construction (EPC) of the agreed upon all facilities listed in the Interconnection Agreement
 - Interconnection Customer will be responsible for EPC of the electrical system on the Interconnection Customer's side of the point of change of ownership (unless otherwise specified in the Interconnection Agreement)
 - Any facilities that will be constructed by Interconnection Customer and deeded to SCE will have to be EPC'd to SCE's specifications

Independent Study Process

- Geared for Interconnection Requests that are not dependent on study results of other requests, including earlier queued generation
- Can apply any time of year
- Request is evaluated for independence both at CAISO level and at SCE/distribution level, if applicable
- If eligible, request will be studied via a System Impact Study and a Facilities Study, apart from cluster studies
- As a result, may achieve interconnection agreement on more expedited timetable (if eligible)

Fast Track Process

- For CAISO-level interconnections, limited to 5 MW or smaller
- For SCE/distribution-level interconnections, limited to 2 MW or smaller
- Allows eligible facility to bypass interconnection studies
- To be eligible, must pass a series of Fast-Track “screens”
- If pass all screens, can proceed to Interconnection Agreement
- If project does not pass screens, SCE will hold customer options meeting and discuss potential supplemental review
- If customer options meeting held, changes could be made to generator or interconnection facilities to enable passing of screens
- If screens still failed after options meeting, then the IC can reapply under ISP or Cluster

Future Workshops and Topics

- Repeat: Overview of Interconnection Process
- Where is best place to locate?
 - Discussion of SPVP and RAM maps
- Deliverability Assessments and Options
- Preview of CAISO GIP2 interconnection process reform

Contacts

- Grid Interconnections Team (where to send interconnection requests)
 - Grid.interconnections@sce.com
- For questions on Interconnection Issues
 - InterconnectionQA@sce.com
- For questions on this Workshop
 - Timothy.Callaway@sce.com
- Today's presentation can be found on SCE.com at the following address
 - www.sce.com/AboutSCE/Regulatory/openaccess