Agreements and Queue Management

Infrastructure Contracts and Management
- Emilee Plouff, Contract Negotiation and Regulatory Contracts
- Joanne Bradley, Queue Management

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Interconnection Process Map

You are here
Topics

- Generator Interconnection Agreement
- Generating Unit Conversions to the CAISO Markets
- Transmission Plan Deliverability on GIA negotiation
- GIA Negotiation and Timeline
- GIA Execution
- Name Changes
- Market Agreements
- Affected Systems
- Modifications
- Repowering Requests
- Queue Management
- Commercial Operation for Markets
Contract Negotiation and Regulatory Contracts

Emilee Plouff, Contracts Analyst
Generator Interconnection Agreement (GIA)

- Terms and conditions for the provision of Interconnection Service to Interconnection Customer
  - Pro forma language was approved by Federal Energy Regulatory Commission
  - Specific to an Interconnection Customer and Generating Facility at a single Point of Interconnection

- 3 parties (Interconnection Customer, Participating TO, and the CAISO)
  - Interconnection is direct to the CAISO Controlled Grid
  - Agreement may cover more than one Resource ID and the CAISO Queue Position
  - Connections to non-CAISO controlled grid are 2 party agreements with Participating TO or UDC
Generating Unit Conversions to the CAISO Markets

• Qualifying Facilities (QFs) and other existing generators convert upon termination or expiration of their power purchase agreements and interconnection agreements

• Interconnection Service capacity based on existing operating capacity and historical generation of the generating facility

• Affidavit to the CAISO initiates the request, with submission to RegulatoryContracts@caiso.com
GIA Implications for Transmission Plan Deliverability Allocation Choices

Choose 1

- Park for 1 year
- Withdraw
- Accept some or all TP deliverability allocation or proceed as Energy Only (EO)
- Seek Transmission Plan Deliverability in next cycle
- Negotiate and Execute GIA

Receive Transmission Plan Deliverability Allocation Results
GIA Tender

- In-Service date (future date)
- Negotiation 120 CD
- Account for milestones leading to construction start 60 CD
- Longest lead facility or network upgrade from study report
- Tender date for GIA (must be a future date)
GIA Tender (Calculation Example)

- In-Service date: February 1, 2022
- 180 CD: 6 months
- Longest lead construction time for interconnection facility or network upgrade: 27 months
- Tender date for GIA: May 1, 2019
GIA Execution Process

- CAISO prepares executable document
- All parties obtain signatures from authorized representative
- All parties must sign via DocuSign® within 10 Business Days of receipt
- All parties receive email notification through DocuSign® when the GIA is fully executed
- CAISO reports agreement execution to FERC

- Agreement are distributed for execution via email through DocuSign. Final version of executed GIA is available for parties to download or print.
- DocuSign Account is not mandatory in order to use their service
Name Changes of Entities

Submit requests to RegulatoryContracts@caiso.com

Changes to Interconnection Customer

- Assignments to affiliates and non affiliates
  - Assignee must meet the PTO’s Interconnection Financial Security (“IFS”) posting requirements
- Entity Name changes only
- Ownership changes

Required Documentation (varies on type of change)

- Secretary of State certificate
- Proof of ownership
  - Sale agreement
  - Membership interest agreement
Market Agreements

• Terms for participating in CAISO markets
  – Participating Generator Agreement (PGA) or Net Scheduled Participating Generator Agreement (NSPGA)
  – Participating Load Agreement (PLA) (e.g., pumps, pump-generating, energy storage)
  – Meter Service Agreement for a CAISO Metered Entity (MSACAIOME)
  – Meter Service Agreement for Scheduling Coordinators (MSASC)
  – Scheduling Coordinator Agreement (SCA)
Questions?

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Queue Management

Joanne Bradley, Lead Queue Management Specialist
Affected Systems

- Affected System
- Potentially Affected System
- Identified Affected System
Affected System Process

**Potentially Affected System**
- CAISO invites Potentially Affected Systems to scoping meetings and Phase I results meetings
- Must identify as Identified Affected Systems within 60 calendar days of notification from the CAISO after initial Interconnection Financial Security has been posted.

**Identified Affected System**
- CAISO will notify Interconnection Customer of their Identified Affected Systems
- Interconnection Customer to affirmatively contact the Identified Affected System operators and make reasonable efforts to address system impacts

**Impacts Resolved**
- Impacts must be resolved no later than six months prior to the generating unit’s Initial Synchronization Date
Upcoming Affected System Outreach

• **Cluster 10**
  – The CAISO will reach out to Potentially Affected Systems after projects post Initial Financial Security (May 2018)
  – Potentially Affected Systems must identify themselves as Identified Affected Systems within 60 days of CAISO notification
  – CAISO will notify Interconnection Customers of their Identified Affected Systems (August 2018)
Modifications to Interconnection Requests

Before Phase II Results Meeting Minutes are published

- Certain changes are allowed without a Material Modification Assessment (MMA) between Phase I and Phase II
- Modification requests are processed by your Interconnection Specialist

After Phase II Results Meeting Minutes are published

- Any modifications require MMA
- Modification requests are processed by QueueManagement@caiso.com
Modification Review Process

• Two very similar processes for modification requests

**Material Modification Assessment process (MMA)**
- For projects prior to declaring COD
- Material if it has an impact on the cost or timing of any other Interconnection Request

**The modification review process**
- Post-COD projects
- Unacceptable if modification is a substantial change to the capacity or electrical characteristics of the project
Modification Review Process contd.

- Submit request with justification in writing to QueueManagement@caiso.com
- Modifications requiring technical data take more time (+/- 30 days) for technical data validation
- The deposit amount is $10,000
  - Interconnection Customer will be charged actual costs incurred by the CAISO and Participating TO, and remaining deposit, if any, is returned
Modifications Subject to Commercial Viability

• Projects requesting to extend their Commercial Operation Date (COD) beyond 7 years are subject to Commercial Viability Criteria

  – Criteria includes permitting, power purchase agreement status, site exclusivity, and GIA status
  – Failure to meet criteria results in conversion to Energy Only deliverability status
  – Limited exemption for no Power Purchase Agreement
    • One year delay for conversion to Energy Only
Modifications to Add Energy Storage

• Projects may request to add energy storage to their Interconnection Request or operating Generating Facility.

• The CAISO expects projects to use the modification processes to add storage to their Interconnection Requests, not wholly replace their existing project.
  – If the project is wholly replaced then the request should be submitted through the interconnection process.
  – Energy storage addition does not alter the approved Net-to-Grid MW for the Interconnection Request.

• If an energy storage modification request is denied, the CAISO will work with the Interconnection Customer to identify how much energy storage might be acceptable.
Modifications to Add Energy Storage contd.

- Energy storage may request deliverability if energy storage can meet the resource adequacy requirements
- Project must retain the maximum deliverability associated with the maximum on-peak exceedance level used in the most recent Deliverability Assessment
  - Example: 100 MW Solar project proposes to replace 20 MW with energy storage, resulting in 80 MW solar and 20 MW energy storage
  - The exceedance value for Solar is 90% and has 90 MW of associated Deliverability

Options for splitting deliverability:

<table>
<thead>
<tr>
<th>Solar (90% exceedance value)</th>
<th>Energy Storage (100% exceedance value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1: 70 MW &amp; PCDS</td>
<td>20 MW &amp; FCDS</td>
</tr>
<tr>
<td>Option 2: 72 MW &amp; PCDS</td>
<td>18 MW &amp; PCDS</td>
</tr>
</tbody>
</table>
Technical Bulletin for Hybrid Energy Storage

• On October 20, 2016, the CAISO posted a technical bulletin for “Implementation of Hybrid Energy Storage Generating Facilities”

• Covers master file modelling, metering and telemetry, interconnection and resource ID selection
Repowering Requests

• Repowering is for existing generating facilities, including QFs, that wish to make insubstantial changes
  – Facilities who propose substantial changes must enter Generation Interconnection and Deliverability Allocation Procedures (GIDAP)
  – Substantiality is determined based on impact of changed electrical characteristics as outlined in the Generator Management BPM

• Must utilize the same fuel source and point of interconnection
  – Some energy storage can be considered the same fuel source
  – May require a facilities study with the Participating TO

• Affidavit to QueueManagement@caiso.com initiates the request
  – Information provided in the affidavit is subject to audit by the CAISO
Queue Management

GIA Milestone tracking

• Interconnection Customers must meet the project milestones in their GIA to be in good standing
  – Deliverability may not be reserved for projects not in good standing

• Interconnection Customers provide quarterly project progress reports to Queue Management after the GIA is effective
Queue Management cont.

• Prior to Initial Synchronization and COD Queue Management verifies contract obligations have been met
  – Upgrades
  – Inverters
  – Affected Systems
  – Asynchronous Obligations
  – MW values in GIA, PGA, and Master File
  – WECC Path Rating and Progress Report Policies and Procedures

• Upon verification, Queue Management provides approval in the New Resource Implementation (NRI) process
Queue Management cont.

• All reliability network upgrades and pre-cursor transmission projects must be in-service prior to initial synchronization date

• Limited Operation Studies
  – Can be used to evaluate if system can support early, energy-only interconnection before network upgrades and interconnection facilities are complete
  – The study is paid for by the Interconnection Customer
  – Only within 5 months of Initial Synchronization
  – Submit request to QueueManagement@caiso.com
  – Results of the study determine the operating capability of the project
Commercial Operation for Markets (COM)

• Block implementation in advance of COD of the project
• CAISO acknowledges wind and solar block construction and ability to energize
• Portion of project is allowed to bid into CAISO markets while remaining portion is testing or under construction
• Resource adequacy eligibility requirements
  – Qualifying capacity must be obtained from the CA Public Utilities Commission
  – Obligated to meet all tariff and resource adequacy requirements (bid, penalty, etc.)
  – Reliability network upgrades must be completed
COM versus Phasing

**COM**
- Requested in the NRI Process
- Allows participation in the market prior to COD of the entire project

**Phasing**
- Identified in GIA
- Allows portions of the project to have various COD dates
Helpful Links

• Contracts and agreements  

• Interconnection of Generating Units and Facilities  

• QF Affidavit Template  
  https://www.caiso.com/Documents/AffidavitTemplate.doc

• Repowering Affidavit Template -  
  http://www.caiso.com/Documents/RepoweringAffidavitTemplate_20141002.doc

• Technical Bulletin: Implementation of Hybrid Energy Storage Generating Facilities -  

• Potentially Affected System Contact List -  
  http://www.caiso.com/Documents/GeneratorInterconnectionProcedures_AffectedSystemsContactList.xls

• Quarterly Status Report Template -  

• Business Practice Manuals  
  https://www.caiso.com/rules/Pages/BusinessPracticeManuals/Default.aspx
Thank you!

- If you have any further questions on the content in this presentation, please send them to

  RegulatoryContracts@caiso.com or QueueManagement@caiso.com
Questions?

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