This presentation is a tool to supplement the FERC approved Generator Interconnection Procedures (GIP) found in Attachment I of PG&E’s Wholesale Distribution Tariff (WDT) and Appendix Y of CAISO’s Tariff. It is not intended to replace the tariff. PG&E advises customers to become familiar with the applicable tariff and use this tool as a supplement.
Overview of Wholesale Generation Interconnection Process

Transmission Interconnections
- Governed by California Independent System Operator Corporation (CAISO) Tariff
  - PG&E’s transmission interconnections are for 60 kV and higher
  - All applications must be submitted to the CAISO
  - These slides are pursuant to CAISO Tariff Appendix Y which is subject to the CAISO

Distribution Interconnections
- Governed by PG&E’s Wholesale Distribution Tariff (WDT)
  - PG&E’s distribution voltage level is defined as facilities operating below 60 kV
  - All applications must be submitted to PG&E
  - These slides are pursuant to WDT Attachment I
**Application Processing Timeline (ISP and Fast Track)**

<table>
<thead>
<tr>
<th>Process Milestone</th>
<th>Duration</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submit Application</td>
<td>Clock Start</td>
<td>Customer</td>
</tr>
<tr>
<td>Deem Application Complete or Provide Notice of Outstanding Items</td>
<td>10 BD</td>
<td>PG&amp;E or CAISO*</td>
</tr>
<tr>
<td>Provide outstanding items or request extension</td>
<td>10 BD</td>
<td>Customer</td>
</tr>
<tr>
<td>Provide outstanding items if extension requested</td>
<td>20 BD**</td>
<td>Customer</td>
</tr>
<tr>
<td>Deem Application Complete</td>
<td></td>
<td>PG&amp;E or CAISO*</td>
</tr>
</tbody>
</table>

* Subject to CAISO  ** PG&E Extension Business Rule  
BD – Business Day  CD – Calendar Day
## Application Processing Timeline (Cluster)

**Process Milestone** | **Duration** | **Responsible Party**
--- | --- | ---
Submit Application | Clock Start | Customer
Deem Application Complete or Provide Notice of Outstanding Items | 10 BD | PG&E or CAISO*
Provide outstanding items | 10 BD from Deemed Complete Notification or 20 BD of Close of Application Window | Customer
Notify Customer of whether Application is Complete | 5 BD after additional info is provided | PG&E or CAISO*
Deem Application Complete | | PG&E or CAISO*

* Subject to CAISO

BD – Business Day   CD – Calendar Day
Complete Application

Transmission* Interconnections
- Completed Application
- Site Plan Diagram
- Single Line Diagram
- Application Fee
- Site Control or In-Lieu Financial Security

**Subject to CAISO

Distribution Interconnections
- Completed Application
- Site Plan Diagram
- Single Line Diagram
- Application Fee**
- Site Control

**Application Fee can be paid after an Invoice Letter is issued by PG&E
Application

Transmission* Interconnections

  The Interconnection Request form can be found on the CAISO website under the heading Cluster Study Process Current process for New Generation Projects, Effective December 19, 2010

Distribution Interconnections

- [http://www.pge.com/includes/docs/word_xls/b2b/newgenerator/wholesalegeneratorinterconnection/Distribution_Interconnection_Request_Form.rtf](http://www.pge.com/includes/docs/word_xls/b2b/newgenerator/wholesalegeneratorinterconnection/Distribution_Interconnection_Request_Form.rtf)

- Send Interconnection Request form along with Site Plan, Site Control, and Single Line Diagram to gen@pge.com or mail to:
  Generator Interconnection Services
  Pacific Gas and Electric Company
  P.O. Box 770000, Mail Code N7L
  San Francisco, CA 94177
  Overnight address: 245 Market Street Mail Code N7L San Francisco, CA

- GIS will send an Invoice Letter when an Interconnection Request is received with instructions on a wire payment

*Subject to CAISO
Scoping Meeting Purpose

Scoping Meeting is designed to provide the Interconnection Customer:

- Ensure common understanding of Interconnection Customer’s project
- Ensure understanding of Generator Interconnection Procedure
- Come to agreement on Point of Interconnection and generator size

- PG&E will provide technical system details, limitations, and queued ahead projects
- PG&E will advise regarding which process Interconnection Customer qualifies for and study to be conducted

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 Studies

Technical Studies are intended to provide:

- Impact of generation on PG&E’s electric system
- Scope of Capital Improvements to PG&E’s electric system 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 triggered by Generator or Cluster
  - Network Upgrades
    Upgrades to the Network (CAISO Controlled Grid) triggered by Generator or Cluster
- Cost Estimate for Scope of Capital Improvements Required and Schedule
Study Results

- **Cost Estimate Accuracy**:
  - **Initial Review**
    - Determines acceptance of Fast Track Process
  - **Supplemental Review**
    - Provides the Customer +/- 50% Accuracy
    - Provides a Rough Scope of Work
  - **System Impact Study**
  - **Phase I Study**
  - **Facilities Study**
    - Provides the Customer +/- 25% Accuracy
    - Provides a Scope of Work
  - **Phase II Study**
  - **Construction**
    - Designs the job and estimates the job with a +/- 10% Accuracy
    - Provides a detailed Scope of Work

- **Technical Studies**
  - Provides the Customer +/- 50% Accuracy
  - Provides a Rough Scope of Work

- **Contract**
  - Determines acceptance of Fast Track Process

- **Project Implementation**

**Supplemental Review System Impact Study Phase I Study In-Service Facilities Study Phase II Study Construction Project In-Service**
Interconnection Study Processes

- **Fast Track**
  - 2 MW on 12kV and 3 MW on 21 kV and 5 MW on higher voltages
  - Fast Track Screens

- **Independent Study Process**
  - Electrical Independence Screens
  - Commercial Operation Date Screen (CAISO)
  - No MW limit
  - Financial security requirements

- **Cluster Study**
  - Default process, no MW limit
  - One annual study
  - Financial security requirements

- **Initial and Supplemental Review**

- **System Impact and Facilities Study**

- **Phase I and II Studies**

- Independent Study Process and Cluster Process Interconnection Requests may apply for full capacity. Deliverability assessment will be conducted by CAISO in CAISO’s cluster process.
# Fast Track Process

<table>
<thead>
<tr>
<th></th>
<th>Distribution</th>
<th>Transmission*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff</td>
<td>Section 2</td>
<td>Section 5</td>
</tr>
<tr>
<td>Applicability</td>
<td>Must Pass Screens</td>
<td>Must Pass Screens</td>
</tr>
<tr>
<td>MW Limit</td>
<td>5MW, Rule of Thumb - 3MW on 21kV 2MW on 12kV</td>
<td>5MW</td>
</tr>
<tr>
<td>Application Fee</td>
<td>$500 (includes Initial Review)</td>
<td>$500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Study</th>
<th>Distribution Timing</th>
<th>Distribution Fee</th>
<th>Transmission Timing</th>
<th>Transmission* Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Review</td>
<td>15 BD</td>
<td>Included</td>
<td>15 BD</td>
<td>$1000</td>
</tr>
<tr>
<td>Supplemental Review</td>
<td>10 BD</td>
<td>Estimated Fee</td>
<td>10 BD</td>
<td>Estimated Fee</td>
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</tbody>
</table>

* Subject to CAISO

BD – Business Day  CD – Calendar Day
# Independent Study Process

<table>
<thead>
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<th>Study</th>
<th>Distribution Timing</th>
<th>Distribution Fee</th>
<th>Transmission* Timing</th>
<th>Transmission* Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>System Impact Study</td>
<td>60 BD</td>
<td>Included</td>
<td>90 BD</td>
<td>Included</td>
</tr>
<tr>
<td>Facilities Study</td>
<td>60 BD</td>
<td>Included</td>
<td>90 BD</td>
<td>Included</td>
</tr>
</tbody>
</table>

* Subject to CAISO

BD – Business Day  CD – Calendar Day
## Cluster Study Process

<table>
<thead>
<tr>
<th></th>
<th>Distribution</th>
<th>Transmission*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tariff</td>
<td>Section 4</td>
<td>Section 6 &amp; 7</td>
</tr>
<tr>
<td>Applicability</td>
<td>Default</td>
<td>Default</td>
</tr>
<tr>
<td>Application Fee</td>
<td>$50k plus $1k/MW (max $250k)</td>
<td>$50k plus $1k/MW (max $250k)</td>
</tr>
</tbody>
</table>

### Study Timings and Fees

<table>
<thead>
<tr>
<th>Study</th>
<th>Distribution Timing</th>
<th>Distribution Fee</th>
<th>Transmission* Timing</th>
<th>Transmission* Fee</th>
<th>Study Start</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase I</td>
<td>134 CD</td>
<td>Included</td>
<td>134 CD</td>
<td>Included</td>
<td>Jun 1</td>
</tr>
<tr>
<td>Phase II</td>
<td>196 CD</td>
<td>Included</td>
<td>196 CD</td>
<td>Included</td>
<td>Jan 15</td>
</tr>
</tbody>
</table>

2 Application Windows for single annual cluster (March Window in 2011 only)

* Subject to CAISO

BD – Business Day  CD – Calendar Day
## Financial Security Postings

<table>
<thead>
<tr>
<th>Posting Number</th>
<th>Posting Type</th>
<th>Posting Amount</th>
<th>Timing</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial</td>
<td>Interconnection Facilities and Distribution Upgrades</td>
<td>Lesser of 20% or $20k/MW</td>
<td>30 CD WDT</td>
<td>After System Impact Study (SIS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60 CD CAISO*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Network Upgrades</td>
<td>15% or $20k/MW or $7.5M (&gt;20MW)</td>
<td>90 CD</td>
<td>After Phase I</td>
</tr>
<tr>
<td>Second</td>
<td>Interconnection Facilities and Distribution Upgrades</td>
<td>30%</td>
<td>120 CD</td>
<td>After Facilities Study</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>180 CD</td>
<td>After Phase II</td>
</tr>
<tr>
<td></td>
<td>Network Upgrades</td>
<td>30% or $1M (&lt;20MW) or $15M (&gt;20MW)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>Interconnection Facilities and Distribution Upgrades</td>
<td>100%</td>
<td>On or before the start of construction</td>
<td>After IA (acquisition of permits)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Network Upgrades</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Subject to CAISO

BD – Business Day   CD – Calendar Day
Financial Security Posting Instructions

Transmission* Interconnections

  Links to Letter of Credit Documents and Surety Bond can be found in the CAISO website under the heading Participating Transmission Owner Financial Security Instruments

Distribution Interconnections

– Letter of Credit Documents and Surety Bond will be on GIS website shortly

*Subject to CAISO
Interconnection Agreement (IA)

Small Generator Interconnection Agreement (SGIA) – 20MW or less
Large Generator Interconnection Agreement (LGIA) – greater than 20 MW
CAISO GIA is a three-party Agreement between CAISO, PG&E, and Interconnection Customer

<table>
<thead>
<tr>
<th>Process Milestone</th>
<th>Duration</th>
<th>Responsible Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provide Final Study Results</td>
<td>Clock Start</td>
<td>PG&amp;E or CAISO*</td>
</tr>
<tr>
<td>Tender IA</td>
<td>30 CD  15 BD (Fast Track)</td>
<td>PG&amp;E or CAISO*</td>
</tr>
<tr>
<td>Respond to Draft</td>
<td>30 CD</td>
<td>All Parties</td>
</tr>
<tr>
<td>IA negotiated and agreed</td>
<td>90 CD from Clock Start</td>
<td>All Parties</td>
</tr>
<tr>
<td>PG&amp;E or CAISO to issue executable IA</td>
<td>15 BD</td>
<td>PG&amp;E or CAISO*</td>
</tr>
<tr>
<td>All parties execute IA</td>
<td>A.S.A.P.</td>
<td>All Parties</td>
</tr>
<tr>
<td>Post Final Posting except Fast Track</td>
<td>On or before the start of construction</td>
<td>Customer</td>
</tr>
</tbody>
</table>

* Subject to CAISO  BD – Business Day  CD – Calendar Day
Project Implementation

- Post Interconnection Agreement, PG&E and Interconnection Customer should be engineering and designing, procuring, and constructing the electrical interconnection
  - PG&E will be engineering the Capital Improvements as agreed upon in the Interconnection Agreement
  - Interconnection Customer will be engineering the electrical system on the Interconnection Customer’s side of the meter and any upgrades that will be applicant built and deeded

- Post EPC, PG&E, CAISO (if applicable), Interconnection Customer will coordinate a pre-parallel inspection and commissioning to achieve Commercial Operation.
Deliverability Assessment

Transmission* Interconnections

- Interconnection Customers can request the CAISO to perform a Deliverability Assessment by selecting “full capacity” on the Interconnection Request form to be submitted to the CAISO
- A Deliverability Assessment is available for Interconnection Requests under the Independent Study Process or Cluster Process
- All Fast Track Process or other “energy only” projects may apply for full capacity using the Additional Deliverability Assessment options under the CAISO’s GIP

Distribution Interconnections

- Interconnection Customers can request the CAISO to perform a Deliverability Assessment by selecting “full capacity” on the Interconnection Request form to be submitted to PG&E
- A Deliverability Assessment is available for Interconnection Requests under the Independent Study Process or Cluster Process
- All Generating Facilities interconnected under the Fast Track Process will have Energy Only deliverability status
- All Fast Track Process or other “energy only” projects may apply for full capacity using the Additional Deliverability Assessment Options under WDT GIP Section 4.22

*Subject to CAISO
Interconnection Resources

PG&E Wholesale Generator Interconnections
http://www.pge.com/b2b/newgenerator/wholesalegeneratorinterconnection/ind

Includes PG&E’s public Distribution (WDT) Queue

CAISO Generator Interconnection Procedures
http://www.caiso.com/275e/275ed48c685e0.html

CAISO Generation Interconnection Queue

Contact gen@pge.com for interconnection related questions
Appendix: Distribution Schedule

Summary

These diagrams are for estimating purposes. It assumes immediate response from Customer.

Fast Track Process

<table>
<thead>
<tr>
<th>2011 (weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
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<table>
<thead>
<tr>
<th>IR Validation</th>
<th>Initial Review</th>
<th>Options Mtg</th>
<th>Supp Review</th>
<th>Supp Review</th>
<th>IA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IA</td>
<td>EPC</td>
<td></td>
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</tr>
</tbody>
</table>

Independent Study Process

<table>
<thead>
<tr>
<th>2011 (bi-weeks)</th>
<th>2012 (bi-weeks)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1   2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18  19  20  21  22  23  24  25  26  1  2  3  4  5  6  7  8  9  10  11  12  13  14  15  16  17  18</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IR Validation</th>
<th>Scoping Mtg</th>
<th>SIS Amnt (15 BD)</th>
<th>System Impact Study 60 BD</th>
<th>Security Posting</th>
<th>Facilities Study 60 BD</th>
<th>IA</th>
<th>EPC</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
<td></td>
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</tbody>
</table>

Cluster Process

<table>
<thead>
<tr>
<th>2011 (Monthly)</th>
<th>2012 (Monthly)</th>
<th>2013 (Monthly)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
</tr>
<tr>
<td>Queue Window</td>
<td>IR Validation</td>
<td>Scoping Mtg</td>
</tr>
<tr>
<td>Phase II Study</td>
<td>IA</td>
<td>EPC</td>
</tr>
</tbody>
</table>
Appendix: Transmission Schedule

Summary

These diagrams are for estimating purposes. It assumes immediate response from Customer.

Fast Track Process

Cluster Process

Independent Study Process

[Diagrams showing timelines and processes]