Generator Interconnection Process

Wholesale Distribution Cluster Study Process (CSP)

This presentation summarizes the FERC-approved Generator Interconnection Procedures (GIP) in Attachment I of PG&E's Wholesale Distribution Tariff (WDT). The presentation does not replace the tariff. PG&E advises customers to become familiar with the tariff and use this presentation only as a supplement to it.

Generation Interconnection Services
Updated: September 18, 2012

Cluster Study Process (CSP)

Definition of CSP Process

A CSP evaluates a group of interconnection requests collectively. CSP Phase I and Phase II engineering studies identify the distribution, reliability and deliverability network upgrades, along with the estimated costs of such upgrades, required to interconnect a generating facility with PG&E's distribution system.

If you are applying through the Cluster Study Process, you may submit your interconnection application only during the Cluster Study application window. You'll find information about application timing in Section 4.1 of the Generation Interconnection Procedures.

Cluster Study Process

Tariff section	4
Applicability	Default
Cluster application window	See section 4.1 of Generation Interconnection Procedures
Application fee	$50K plus $1K/MW (max $250K)

Study	Timing	Fee
Phase I	134 CD	Included in app fee
Phase II	196 CD	Included in app fee

CD – Calendar Day

Wholesale Distribution Generation Cluster Study Process

- PG&E's distribution voltage level: facilities operating below 60 kV
  - Governed by PG&E's Wholesale Distribution Tariff (WDT)
  - All applications must be submitted to PG&E
  - This presentation supplements WDT Attachment I

Complete Distribution CSP Interconnection Application

Include:

- **Completed application (with Appendix A)**
- **Site plan diagram**
- **Single-Line Diagram**
- **Application fee***
- **Site control document**

***Application fee paid after PG&E issues invoice letter**

Distribution CSP Interconnection Application

- **Submit complete interconnection application* online at http://pge.com/wholesale/apply**
- **Direct inquiries to the Application Desk at WholesaleGen@pge.com**

***GIS will send your invoice letter with instructions on wire payment after we receive your interconnection request**

Application Processing Timeline

Process Milestone	Duration	Responsible Party
Submit application	Clock start	Customer
Deem application complete or provide notice of outstanding items	10 BD	PG&E
Provide outstanding items	10 BD from deemed incomplete notification or 20 BD from close of cluster application window	Customer
Notify customer of whether application is complete	5 BD after additional information is provided	PG&E
Deem application complete		PG&E

BD – Business Day

Scoping Meeting Purpose

Scoping meeting:

- **Ensures common understanding of project**
- **Ensures customer understanding of generator interconnection process**
- **Secures agreement on point of interconnection and generator size**
  - **PG&E provides technical system details, limitations and queued-ahead projects**
- **Advises which process (Independent, Fast Track or Cluster study) customer qualifies for and studies to be conducted**
- **Determines next steps**

Five business days after scoping meeting, customer must confirm point of interconnection and generator size.

Scoping Meeting

Process Milestone	Duration	Responsible Party
Deem application complete	Clock start	PG&E
Schedule scoping meeting	10 BD	PG&E
Scoping meeting	Scheduled or 60 CD from application window close	Both parties
Designate and confirm point of interconnection	5 BD	Customer
Tender Generator Interconnection Study Process Agreement (GISPA)	10 BD or 60 CD from application window close	PG&E

BD – Business Day CD – Calendar Day

Scope of Studies

Technical studies:

- Show impact of generation on PG&E's electric system
- Show capital improvements to PG&E's electric system required to ensure safety, reliability and integrity of the grid:
  - Generator-specific facilities required for interconnection
  - Distribution upgrades to be triggered by cluster
  - Network upgrades to CAISO-controlled grid to be triggered by cluster
- Provide schedule and cost estimate for scope of capital improvements

Phase I Study

Process Milestone	Duration	Responsible Party
Tender Generator Interconnection Study Process Agreement (GISPA)	Clock start	PG&E
Execute GISPA	30 CD	Customer
Execute GISPA	ASAP	PG&E
Begin Phase I study	June 1*	PG&E
Provide Phase I study results	134 CD	PG&E
Initial Posting	90 CD	Customer
Phase I study results meeting	30 CD from Phase I study results	Both parties

*Subject to change

CD – Calendar Day

Phase II Study

Process Milestone	Duration	Responsible Party
Phase I study results meeting	Clock start	Both
Provide Appendix B (data form to be provided by the interconnection customer before Phase II Interconnection Study begins)	5 BD	Customer
Begin Phase II study	January 15*	PG&E
Provide Phase II study results	196 CD	PG&E
Post second posting	180 CD	Customer
Phase II study results meeting	30 CD from Phase II study results	Both

*Subject to change

CD – Calendar Day

Interconnection Agreement

Small Generator Interconnection Agreement (SGIA) – 20 MW or less

Large Generator Interconnection Agreement (LGIA) – greater than 20 MW

Process Milestone	Duration	Responsible Party
Provide final study results	Clock start	PG&E
Tender Interconnection Agreement (IA)	30 CD	PG&E
Respond to draft	30 CD	Both
IA negotiated and agreed on	90 CD from clock start	Both
PG&E issues executable IA	15 BD	PG&E
Execute IA	ASAP	Both
Post final posting	On or before start of construction	Customer

BD – Business Day CD – Calendar Day

Project Implementation

- Post-Interconnection Agreement, PG&E and customer engineer, design, procure and construct (EPC) electrical interconnection
  - PG&E engineers capital improvements per Interconnection Agreement
  - Customer engineers electrical system on customer side of meter and any upgrades to be customer-built and deeded
- Post-EPC, PG&E and customer coordinate pre-parallel inspection and commissioning to achieve commercial operation

Distribution Deliverability Assessment

Customers who apply for interconnection under the Independent Study Process or Cluster Study Process can request that CAISO perform a Deliverability Assessment by selecting “Full Capacity” on the Interconnection Request form submitted to PG&E

Financial Security Postings

Posting Number	Posting Type	Posting Amount	Timing	Phase
Initial	Interconnection facilities	Lesser of 20% or $20K/MW	30 CD	After Phase I
	Network upgrades	15% or $20K/MW or $7.5M (>20MW)	90 CD	
Second	Interconnection facilities	30%	120 CD	After Phase II
	Network upgrades	30% or $1M (<20MW) or $15M (>20MW)	180 CD	
Third	Interconnection facilities	100%	On or before start of construction	After Interconnection Agreement (acquisition of permits)
	Network upgrades	100%		

CD – Calendar Day

Financial Security Posting Instructions

Links to the following forms can be found on the Additional Resources page of http://pge.com/wholesale under: "Wholesale Distribution Financial Postings Resources" including:

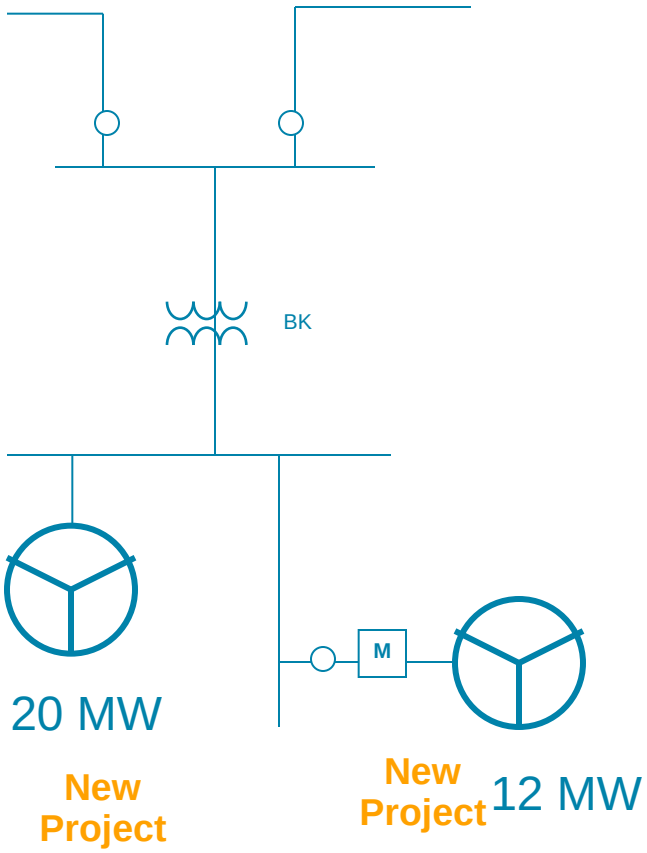
- **Letters of Credit**
- **Escrow Agreements**
- **Surety Bonds**
- **Guaranty Agreements**

For Certificate of Deposit or Payment Bond Certificates, please contact PG&E to determine acceptable forms

Interconnection Resources

- PG&E Wholesale Generation Interconnections website: http://pge.com/wholesale
  - PG&E's Public Distribution (WDT) Queue
  - Getting Started Guides
  - Application Checklists
  - Online Application at http://pge.com/wholesale/apply
- Questions? Contact wholesalegen@pge.com

Appendix 1: Cluster Methodology



Two or more requests for interconnection at a single substation that do not pass the Independent Study Electrical Independence Test will be studied together

For more information, refer to section 4.8.1, Grouping of Interconnection Requests, in the WDT, FERC Electric Tariff Volume No. 4, Attachment 1, Generation Interconnection Procedures

Appendix 2: Distribution Cluster Study Schedule Summary

This diagram is for estimating purposes and assumes immediate customer response.

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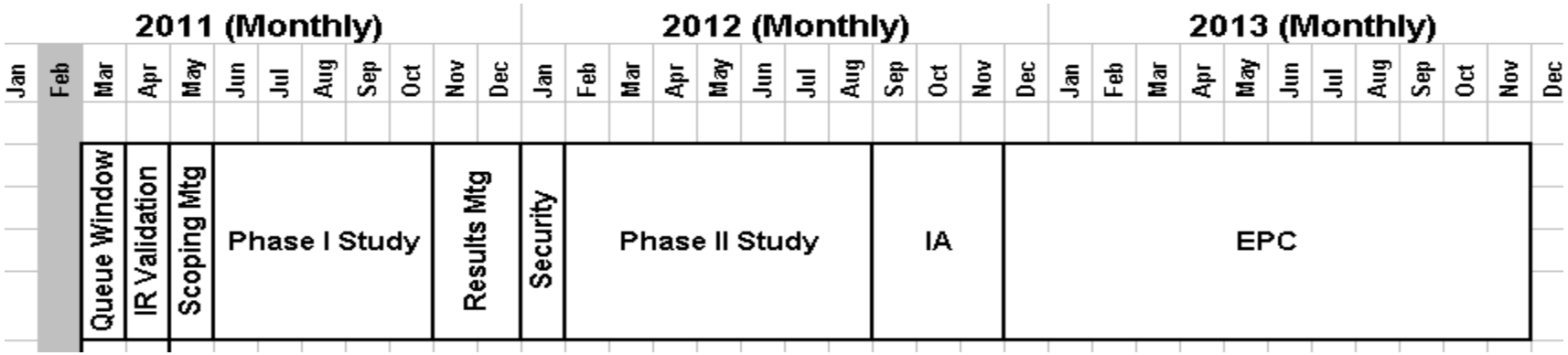


Appendix 3: Definitions

Distribution Upgrades – Additions, modifications and upgrades to the distribution provider's distribution system at or beyond the point of interconnection that facilitate interconnection of the GF and render the service necessary to effect the Interconnection Customer's wholesale sale of electricity in interstate commerce. Distribution upgrades do not include interconnection facilities.

Distribution System – Those non-ISO transmission and distribution facilities owned, controlled and operated by the Distribution Provider that are used to provide distribution service under the Tariff, which facilities and equipment are used to transmit electricity to ultimate usage points such as homes and industries directly from nearby generators or from interchanges with higher voltage transmission networks which transport bulk power over longer distances. The voltage levels at which Distribution Systems operate differ among areas.

Interconnection Facilities – The distribution provider's and interconnection customer's interconnection facilities. Interconnection facilities include all facilities and equipment between the generation facility (GF) and the point of interconnection, including any modifications, additions or upgrades necessary to physically and electrically interconnect the GF to the distribution provider's distribution system. Interconnection facilities are sole-use facilities and do not include distribution upgrades or network upgrades.

Appendix 3: Definitions

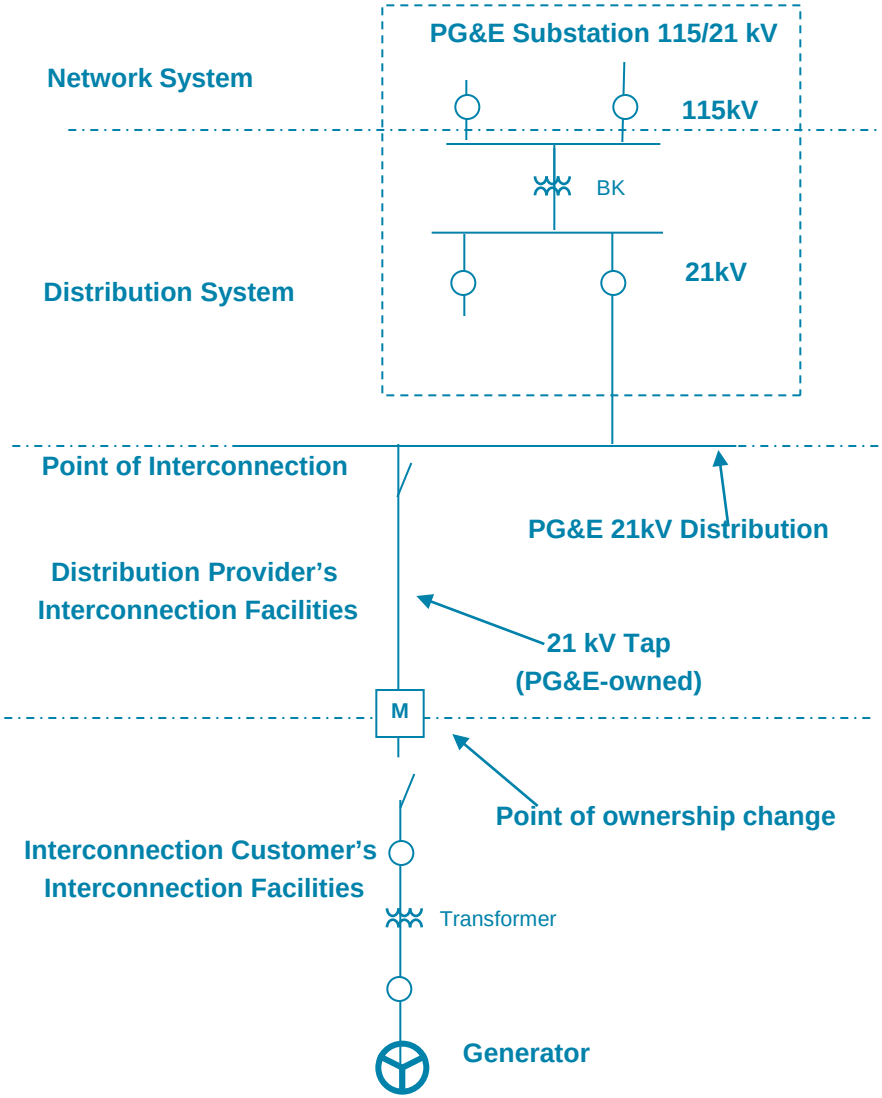
Network Upgrades – Additions, modifications, and upgrades to the distribution provider's transmission system required at or beyond the point at which the distribution system connects to the distribution provider’s transmission system to accommodate the interconnection of the GF to the distribution provider’s transmission system. Network upgrades do not include distribution upgrades.

Point of Interconnection – The point where the interconnection facilities connect with the distribution provider's distribution system.

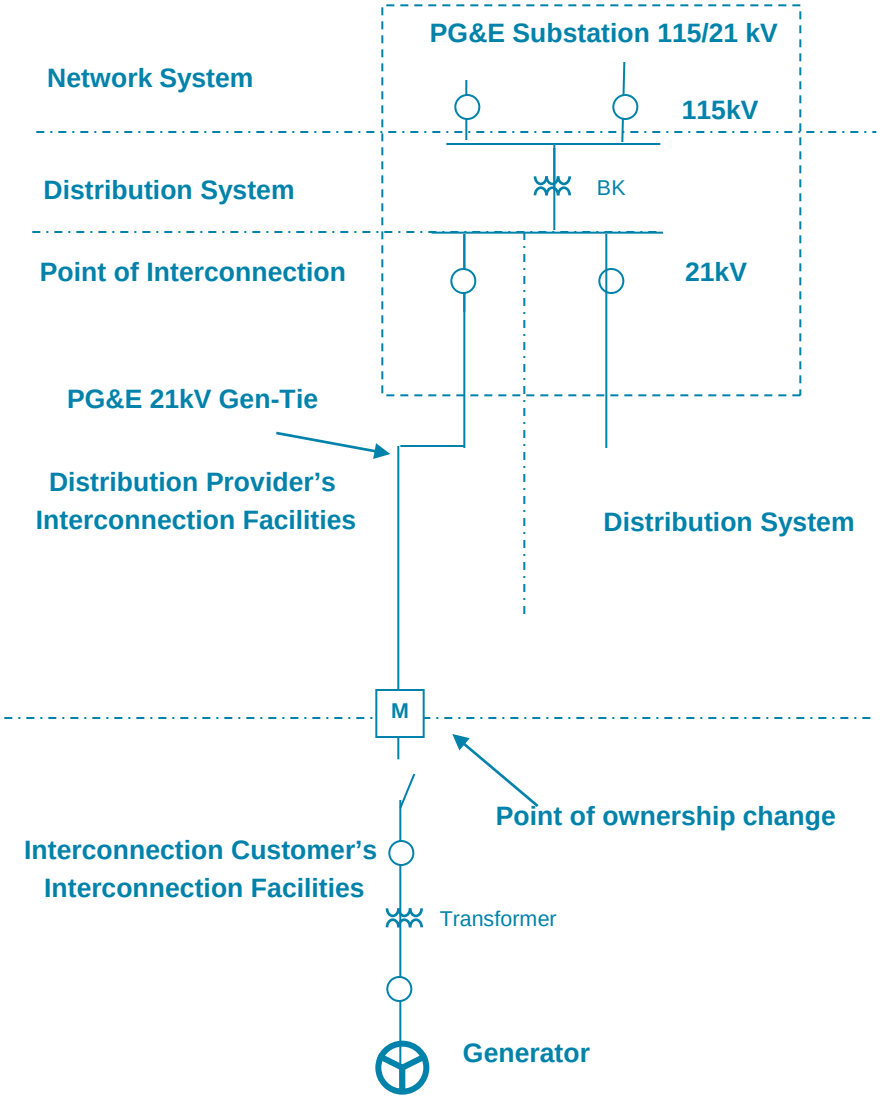
Upgrades – The required additions and modifications to the distribution provider's transmission system and distribution system at or beyond the point of interconnection. Upgrades may be network upgrades or distribution upgrades. Upgrades do not include interconnection facilities.

Appendix 4: Point of Interconnection Illustration

Simplified Single Line for Tap Interconnection



Simplified Single Line for Gen-Tie Interconnection



Thank You

For more information please contact Generation Interconnection Services at
wholesalegen@pge.com