

Generator Interconnection Process

Wholesale Distribution Overview



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



Wholesale Distribution Generation Interconnection 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**



Application Processing Timeline

(Independent Study Process and Fast Track 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 or request extension	10 BD	Customer
Provide outstanding items if extension requested	20 BD*	Customer
Deem application complete		PG&E

* PG&E Extension Business Rule BD – Business Day



Application Processing Timeline (Cluster Study Process)



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



Complete Distribution Interconnection Application



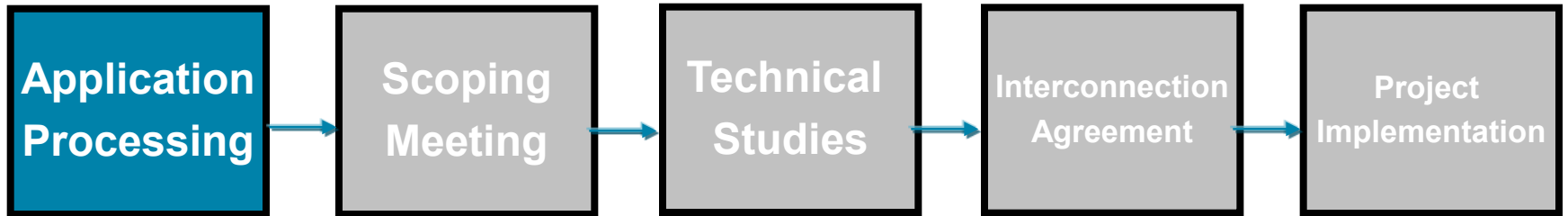
Include:

- **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 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**

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.

Scope of Studies

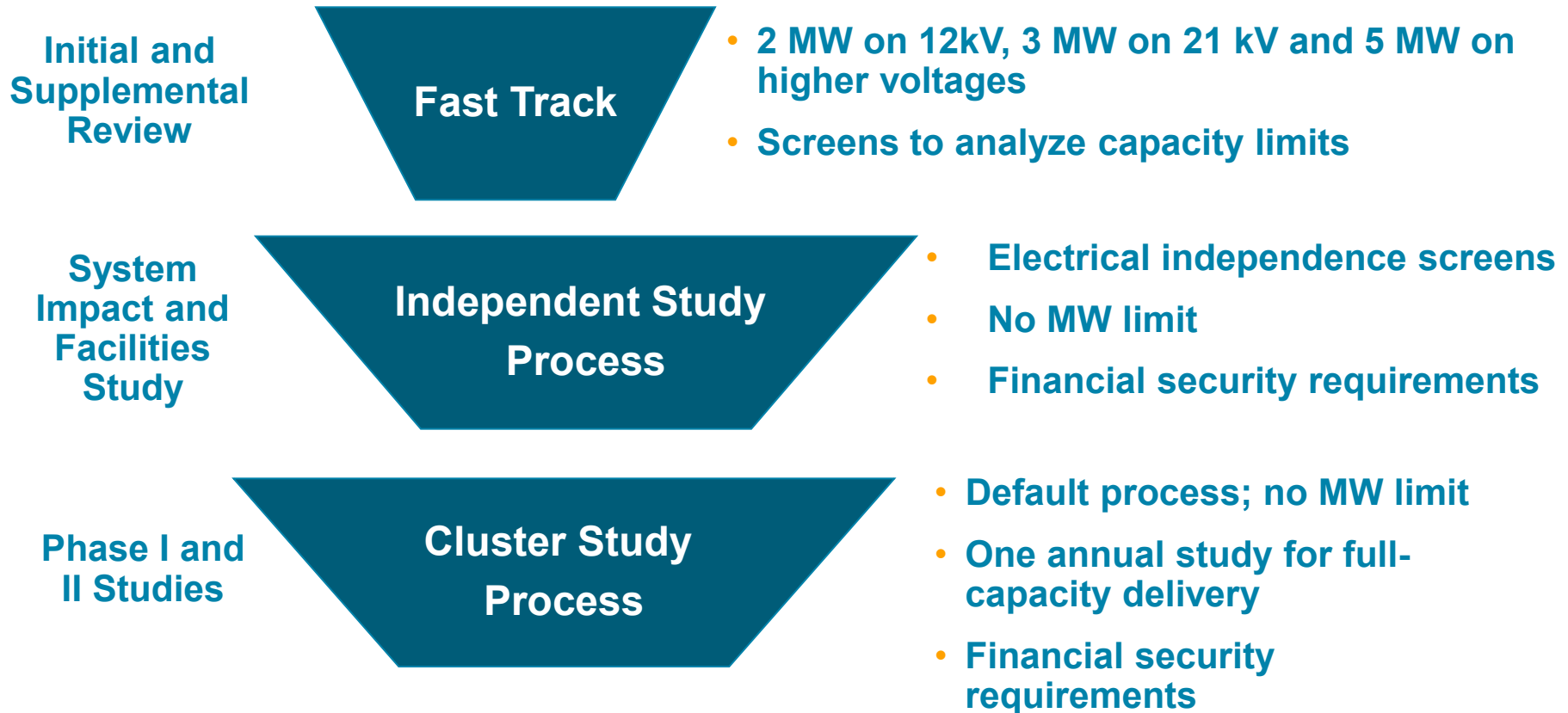


Technical studies:

- 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 generator or cluster
- Provide schedule and cost estimate for scope of capital improvements



Interconnection Study Process



Initial and
Supplemental
Review

Fast Track

- 2 MW on 12kV, 3 MW on 21 kV and 5 MW on higher voltages
- Screens to analyze capacity limits

System
Impact and
Facilities
Study

**Independent Study
Process**

- Electrical independence screens
- No MW limit
- Financial security requirements

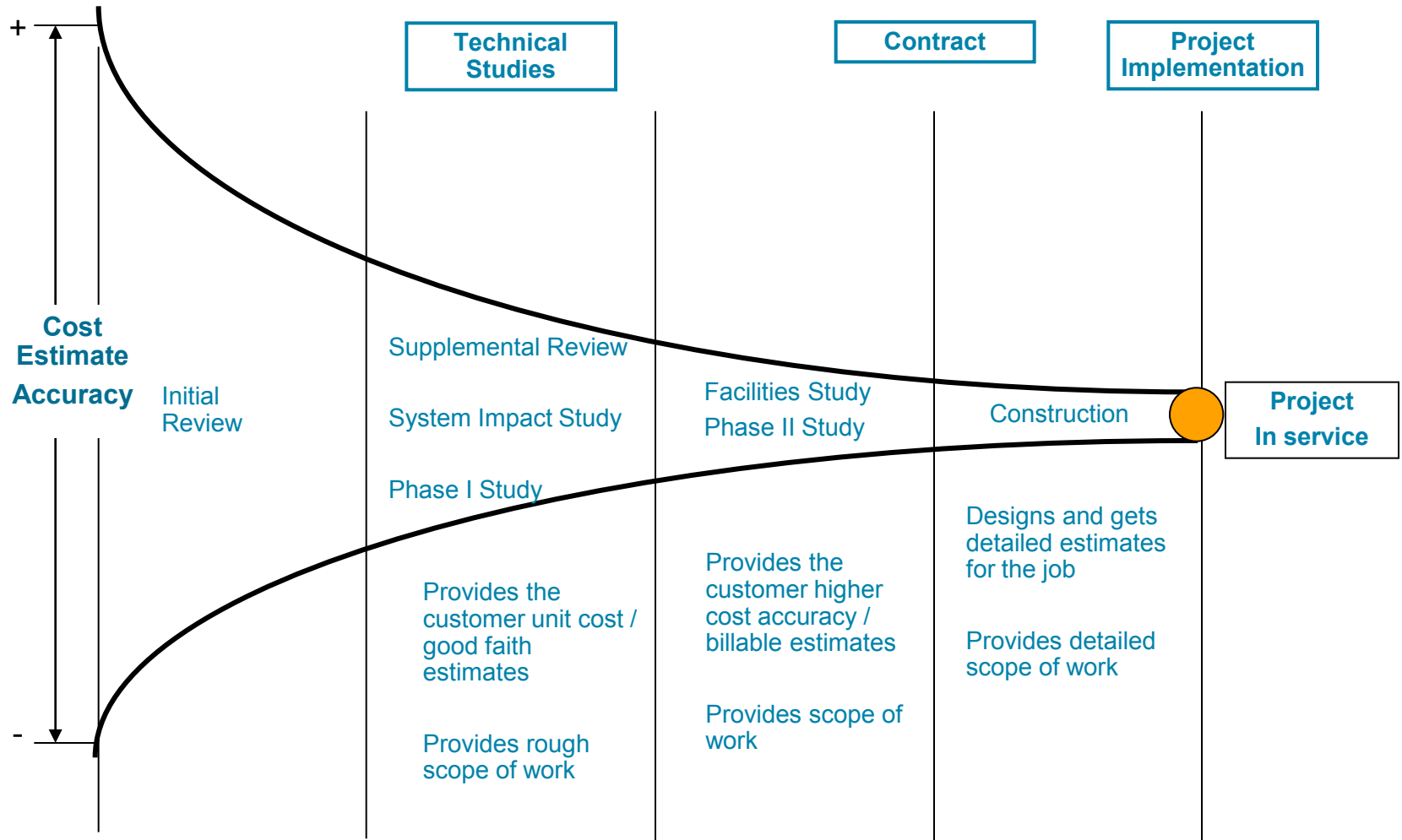
Phase I and
II Studies

**Cluster Study
Process**

- Default process; no MW limit
- One annual study for full-capacity delivery
- Financial security requirements

Customers requesting an Independent Study Process or a Cluster Study Process may apply for Full-Capacity Delivery. (Full-Capacity Delivery is the generating facility's ability to deliver its full output to the grid without constraints.)

Study Results





Fast Track Process

Tariff section	2
Applicability	Must pass screens
MW limit	2MW on 12kV 3MW on 21kV 5MW on higher voltages
Application fee	\$500 (includes initial review)

Study	Timing	Fee
Initial review	15 BD	Included in application fee
Supplemental review	10 BD	\$1,500 deposit

BD – Business Day



Independent Study Process

Tariff section	3
Applicability	Electrical Independence Test
MW limit	No limit
Application fee	\$50K plus \$1K/MW (max \$250K)

Study	Timing	Fee
System impact study	60 BD	Included in app fee
Facilities study	60 BD	Included in app fee

BD – Business Day



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



Financial Security Postings

Posting Number	Posting Type	Posting Amount	Timing	Phase
Initial	Interconnection facilities and distribution upgrades	Lesser of 20% or \$20K/MW	30 CD	After System Impact Study (ISP)
	Network upgrades	15% or \$20K/MW or \$7.5M (>20MW)	90 CD	After Phase I (Cluster)
Second	Interconnection facilities and distribution upgrades	30%	120 CD	After Facilities Study (ISP)
	Network upgrades	30% or \$1M (<20MW) or \$15M (>20MW)	180 CD	After Phase II (Cluster)
Third	Interconnection facilities and distribution upgrades	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 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/15 BD (Fast Track)	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 (except Fast Track)	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 a Deliverability Assessment**
 - **Customers can request that CAISO perform a Deliverability Assessment by selecting “Full Capacity” on the Interconnection Request form submitted to PG&E**
- **All generating facilities interconnected under the Fast Track Process will have “Energy-Only” deliverability status**
 - **Fast Track or other Energy-Only customers may apply for Full Capacity using the Additional Deliverability Assessment Options under WDT GIP Section 4.22**



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: Distribution Schedule Summary

Fast Track Process

2011 (weeks)																																													
6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45						
IR Validation	Initial Review	Options Mtg	Supp Review Agmt	Supp Review		IA		EPC																																					
			IA	EPC																																									

Independent Study Process

2011 (bi-weeks)																										2012 (bi-weeks)																			
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	1		
IR Validation	Scoping Mtg	SIS Agmt (15 BD)	System Impact Study 60 BD					Security Posting	Facilities Study 60 BD				IA	EPC																															

Cluster Study Process

2011 (Monthly)												2012 (Monthly)												2013 (Monthly)											
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Queue Window	IR Validation	Scoping Mtg	Phase I Study					Results Mtg	Security	Phase II Study					IA	EPC																			



Appendix 2: 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 2: 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.

Thank You

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

