

Generator Interconnection Process

Wholesale Transmission Independent Study Process
(ISP)



This presentation summarizes the FERC-approved Generator Interconnection Procedures (GIP) in Appendix Y of the California Independent System Operator (CAISO) Tariff dated January 11, 2012. Information in subsequent versions of Appendix Y may supersede the information herein, so you should check the CAISO website (<http://caiso.com/rules/Pages/Regulatory/TariffArchive/Default.aspx>) for updates. 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

Overview of Wholesale Transmission Independent Study Process ³



PG&E's transmission voltage level: 60 kV and higher

- **Governed by CAISO Tariff**
- **All applications must be submitted to CAISO**
- **This presentation supplements CAISO Tariff Appendix Y**



Independent Study Process

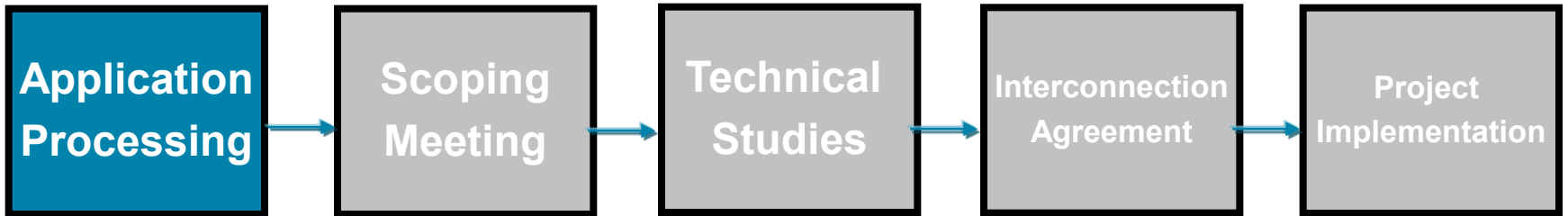
Tariff	Section 4
Applicability	Commercial Operation Date Test
MW limit	No limit
Application fee	\$50K plus \$1K/MW (max \$250K)

Study	Timing*	Fee*
System Impact Study	90 BD	Included in app fee
Facilities Study	90 BD	Included in app fee

*Determined by CAISO BD – Business Day



Transmission ISP Interconnection Application



The Transmission Interconnection Request form can be found on the CAISO website under “Study Process” at

<http://caiso.com/docs/2002/06/11/2002061110300427214.html>



Transmission ISP Interconnection Application



Transmission interconnection applications include:

- **Completed application**
- **Site plan diagram**
- **Single-Line Diagram**
- **\$50K plus \$1K/MW (\$250K max) application fee**
- **Site control or in-lieu financial security**



Application Processing Timeline



Process Milestone	Duration	Responsible Party
Submit application	Clock start	Customer
Deem application complete or provide notice of outstanding items	10 BD	CAISO
Provide outstanding items	10 BD from deemed incomplete notification	Customer
Notify customer of whether application is complete	5 BD after additional information is provided	CAISO
Notify customer whether ISP criteria are satisfied	15 BD from receiving interconnection request	CAISO
Deem application complete		CAISO

BD – Business Day CD – Calendar Day



Criteria for Independent Study Process Eligibility

Demonstrate:

- That inclusion in Queue Cluster will not accommodate desired commercial operation date
- Site exclusivity
- That proposed generating facility is electrically independent of interconnection requests in Queue Cluster and in earlier-queued ISP requests



ISP Electrical Independence Test (EIT)

For details on the EIT, refer to these sections of CAISO Tariff Appendix Y Generation Interconnection Procedures:

- 4.2 Determination of Electrical Independence
- 4.2.1 Flow Impact Test
- 4.2.2 Short Circuit Test

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 study to be conducted
- Determines next steps

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



ISP Qualification Path 1 – Not Qualified



Process Milestone	Duration	Responsible Party
Deem application complete	Clock start	CAISO
Notify that project meets ISP criteria	15 BD from receipt of interconnection request	CAISO
ISP “not-qualified” notification; interconnection request deemed withdrawn		CAISO
Request to hold interconnection request for inclusion in Queue Cluster	10 BD from “not-qualified” notification	CAISO

BD – Business Day



ISP Qualification Path 2 – Qualified



Process Milestone	Duration	Responsible Party
Notification ISP Criteria met	Clock start	CAISO
Schedule scoping meeting	5 BD	CAISO
Designate point of interconnection	3 BD from scoping meeting	Customer
Provide ISP Agreement	5 BD from scoping meeting	CAISO
Return executed agreement	30 BD from receipt of agreement	Customer

BD – Business Day

Scope of Studies



Technical studies:

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



System Impact Study (SIS)



Process Milestone	Duration	Responsible Party
ISP Study Agreement execution	Clock start	CAISO
Provide SIS results	90 BD	CAISO
Post initial posting	30 CD from SIS results	Customer

BD – Business Day CD – Calendar Day



Facilities Study (FS)



Process Milestone	Duration	Responsible Party
Provide SIS results	Clock start	CAISO
Post Interconnection Financial Security (IFS) initial posting	30 CD	Customer
Provide FS results	90 CD after IFS (network upgrades required) 60 CD from SIS results (no network upgrades required)	CAISO
Post second financial posting	120 CD from facilities study	Customer
Post third financial posting	Before start of construction	Customer

BD – Business Day CD – Calendar Day



Interconnection Agreement



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

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

CAISO GIA is a three-party agreement between CAISO, PG&E and customer

Process Milestone	Duration	Responsible Party
Provide final study results	Clock start	CAISO
Tender IA	30 CD from clock start	CAISO
Phase II Study Results Meeting	30 CD from study start	All parties
IA negotiated and agreed on	90 CD from clock start	All parties
Issue executable IA	15 BD from finalized IA	CAISO
All parties execute IA	ASAP	All parties

BD – Business Day CD – Calendar Day



- **Post-Interconnection Agreement, PG&E and customer engineer, design, procure and construct (EPC) electrical interconnection**
 - PG&E designs/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**



Financial Security Postings

Posting Number	Posting Type	Posting Amount	Timing	Phase
Initial	Interconnection facilities	20% of interconnection facilities cost	30 CD	After SIS
	Network upgrades	Lesser of 15% or \$20K/MW or \$7.5M (>20 MW only), but in no event less than \$50K (<20 MW) or less than \$500K (>20 MW)	30 CD	After SIS
Second	Interconnection facilities and distribution upgrades	30%	120 CD	After FS
	Network upgrades	Lesser of 30% or \$1M (<20 MW) or \$15M (>20 MW), but in no event less than \$100K (<20 MW) or \$500K (>20 MW)	120 CD	After FS
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

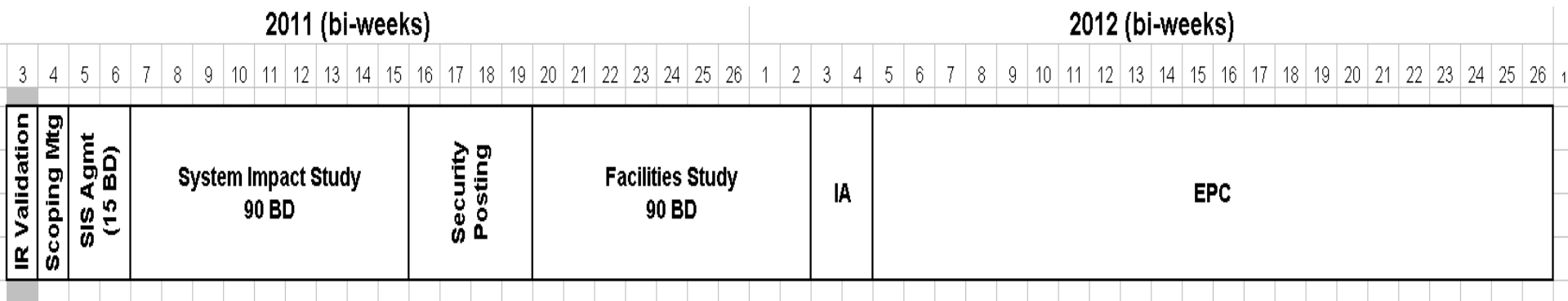
The link below directs to the CAISO website, “Participating transmission owner financial security instruments/PG&E” which contains PG&E Letter of Credit documents and the PG&E Surety Bond:

<http://caiso.com/docs/2002/06/11/2002061110300427214.html>



Appendix 1: Transmission Independent Study Schedule Summary

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



Thank You

**For more information please contact
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