

# Generator Interconnection Process

Wholesale Transmission Overview



**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



# Wholesale Transmission Generation Interconnection Process Overview

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**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**



# Application Processing Timeline (Independent Study Process and Fast Track Process)



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



# Application Processing Timeline (Cluster Study Process)

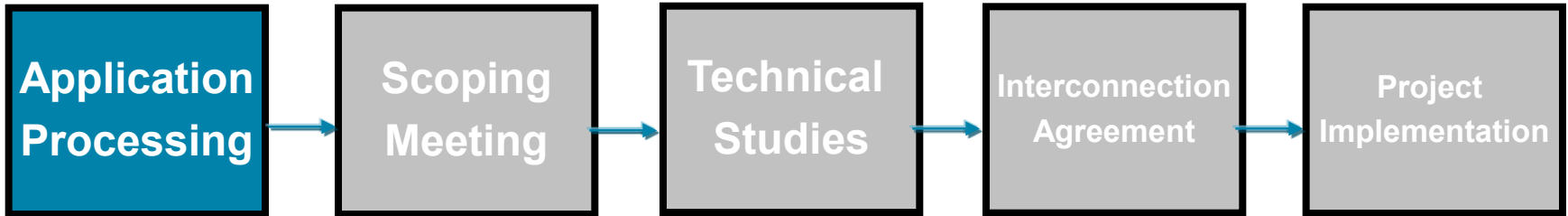


Process Milestone	Duration	Responsible Party
Submit application	Clock start	Customer
Deem application complete or provide notice of outstanding items	10 BD	CAISO
Provide outstanding items	10 BD from deemed incomplete notification or 20 BD from close of application window	Customer
Notify customer of whether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

BD – Business Day



# Transmission Interconnection Application



The Transmission Interconnection Request form is located under “Study Process” on the CAISO website listed below:

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



# Complete Transmission Interconnection Application



## Complete Transmission Interconnections Applications

- Completed application
- Site plan diagram
- Single-Line Diagram
- Application fee
- Site control or in-lieu financial security

# 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
- Advises which process (Independent, Fast Track or Cluster study) customer qualifies for and studies to be conducted
- Determines next steps

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



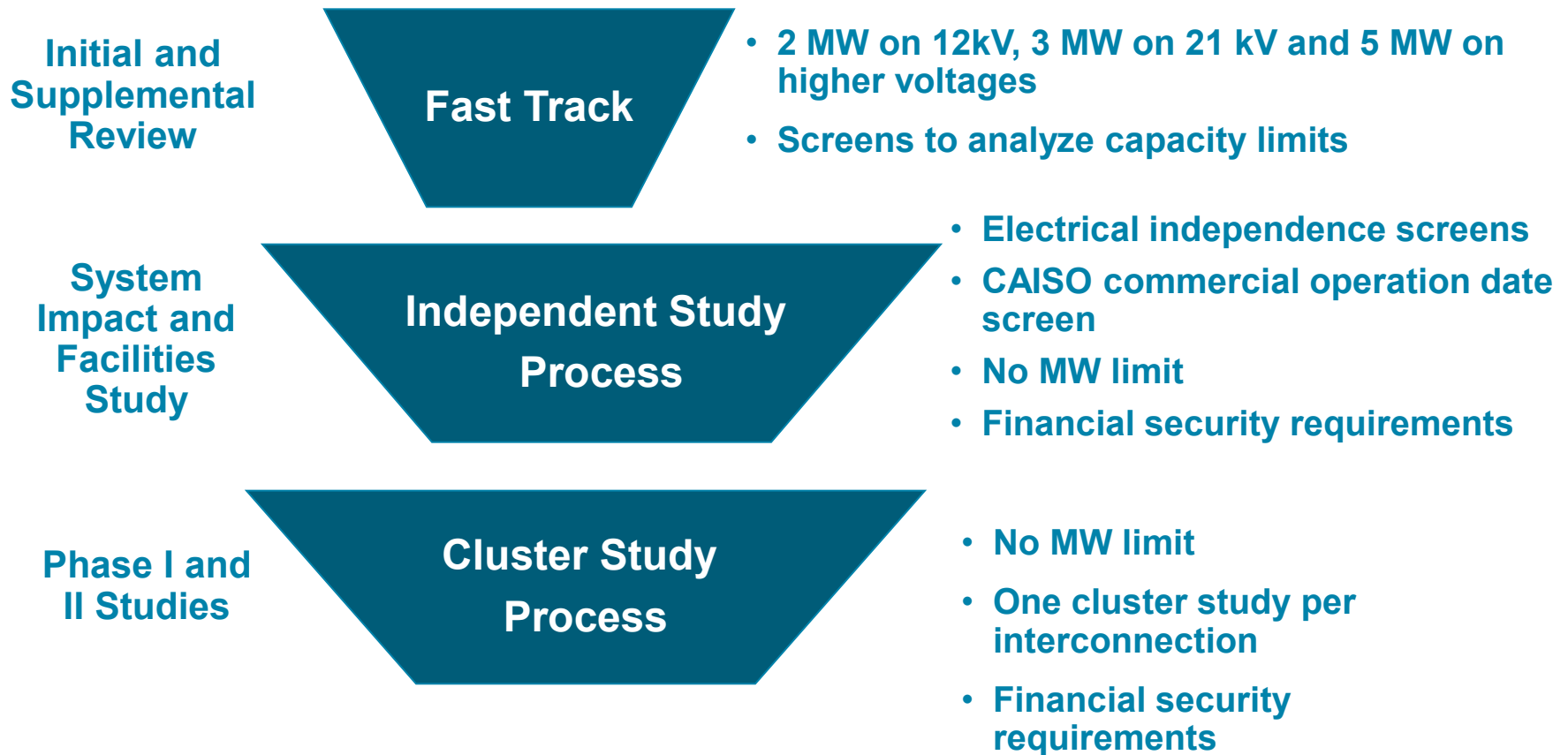


## Technical studies:

- 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



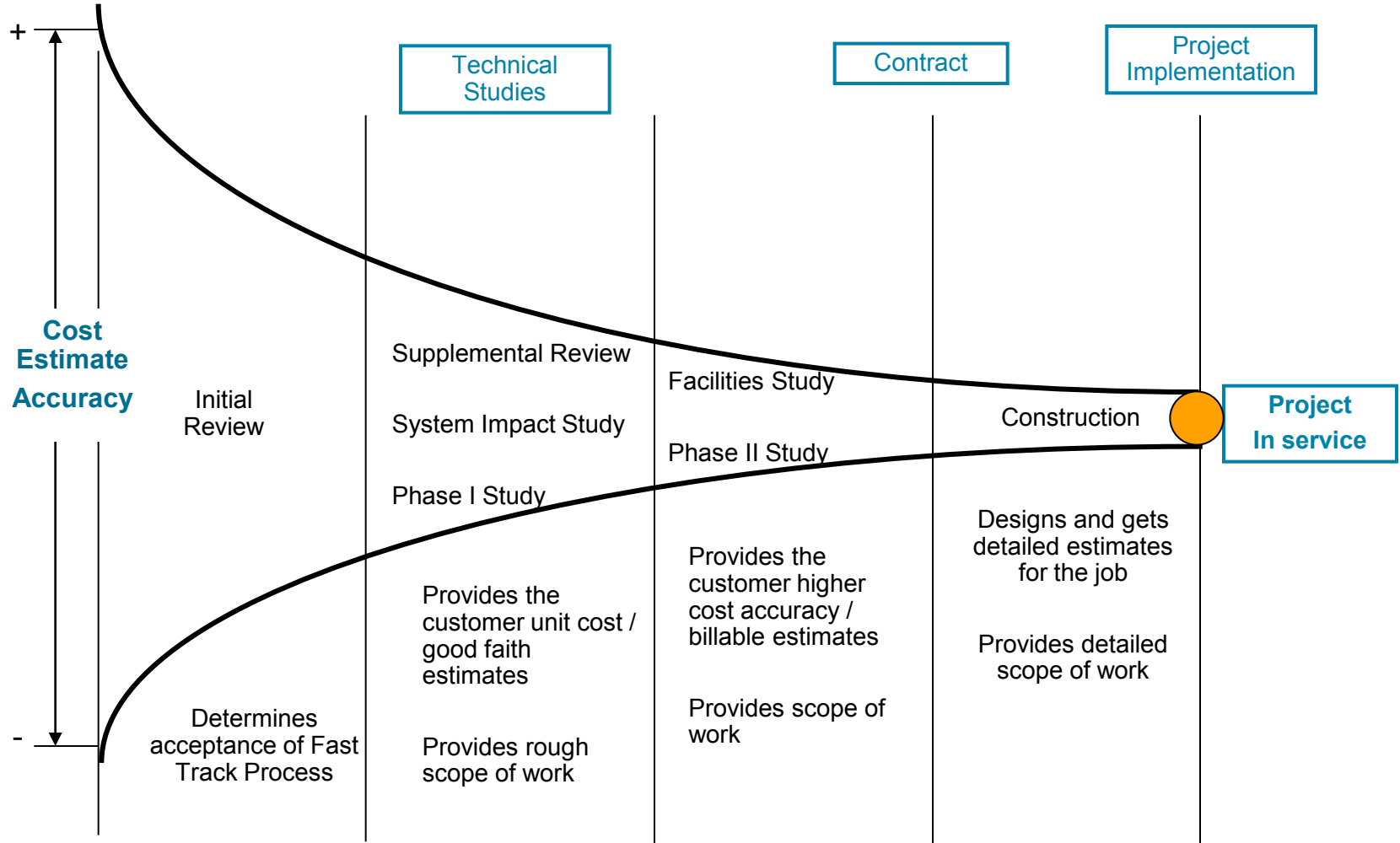
# Interconnection Study Processes



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.)



# Interconnection Study Results





# Fast Track Process

<b>Tariff</b>	Section 5
<b>Applicability</b>	Must pass screens
<b>MW Limit</b>	5 MW
<b>Application Fee</b>	\$500

<b>Study</b>	<b>Timing*</b>	<b>Fee*</b>
<b>Initial review</b>	15 BD	\$1,000
<b>Supplemental review</b>	10 BD	\$1,500 deposit

\*Determined by CAISO

BD – Business Day



# Independent Study Process

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

<b>Study</b>	<b>Timing*</b>	<b>Fee*</b>
<b>System Impact Study</b>	90 BD	Included in app fee
<b>Facilities Study</b>	90 BD	Included in app fee

\*Determined by CAISO      BD – Business Day



# Cluster Study Process

<b>Tariff</b>	Section 6 & 7
<b>Cluster application window</b>	See <a href="http://caiso.com/docs/2002/06/11/2002061110300427214.html">http://caiso.com/docs/2002/06/11/2002061110300427214.html</a>
<b>Application fee</b>	\$50K plus \$1K/MW (max \$250K)

<b>Study</b>	<b>Timing*</b>	<b>Fee</b>
Phase I	134 CD	Included in app fee
Phase II	196 CD	Included in app fee

\*Determined by CAISO      CD – Calendar Day



# Financial Security Postings

Posting Number	Posting Type	Posting Amount	Timing ISP/CSP	Phase
Initial	Interconnection facilities	20% of interconnection facilities cost	30 CD/90 CD	After System Impact Study (ISP)
	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/90 CD	After Phase I (CSP)
Second	Interconnection facilities and distribution upgrades	30%	90 CD/180 CD	After Facilities Study (ISP)
	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/180 CD	After Phase II (CSP)
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

**Below is the link on the CAISO website, “Participating transmission owner financial security instruments/PG&E” to the PG&E Letter of Credit documents and the PG&E Surety Bond:**

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





# 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 interconnection customer**

Process Milestone	Duration	Responsible Party
Provide final study results	Clock start	CAISO
Tender IA	30 CD/15 BD (Fast Track)	CAISO
Respond to draft	30 CD	All parties
IA negotiated and agreed on	90 CD from clock start	All parties
Issue executable IA	15 BD	CAISO
All parties execute IA	ASAP	All parties
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, CAISO and customer coordinate a pre-parallel inspection and commissioning to achieve commercial operation**



# Transmission Deliverability Assessment

- **Customers who apply for interconnection under the Independent Study Process or Cluster Study Process can request a Deliverability Assessment**
  - **To do this, select “Full Capacity” on the Interconnection Request form you submit to CAISO**
- **All Fast Track or other “Energy-Only” customers may apply for Full Capacity using the Additional Deliverability Assessment options under the CAISO’s Generator Interconnection Procedures**



# Interconnection Resources

## CAISO small and large generator interconnection procedures

<http://caiso.com/275e/275ed48c685e0.html>

## CAISO Generation Interconnection Queue

<http://caiso.com/2826/2826b8435fe20.pdf>

Questions? Contact [wholesalegen@pge.com](mailto:wholesalegen@pge.com)

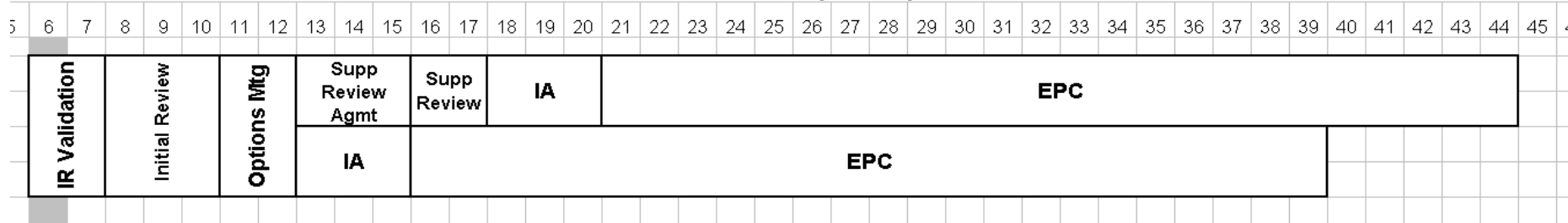


# Appendix: Transmission Schedule Summary

These diagrams are for estimating purposes only and assume immediate response from customer.

## Fast Track Process

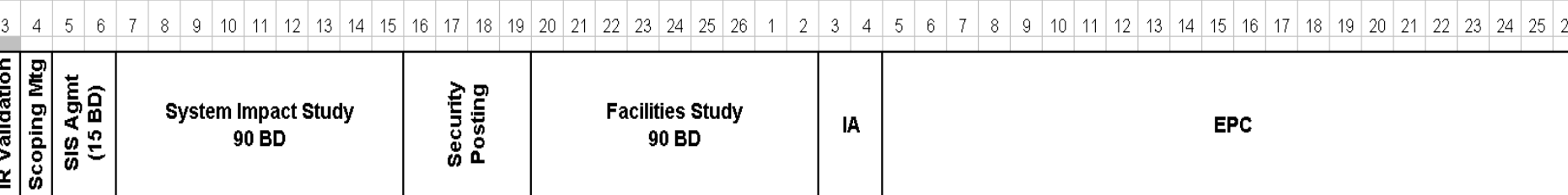
2011 (weeks)



## Independent Study Process

2011 (bi-weeks)

2012 (bi-weeks)

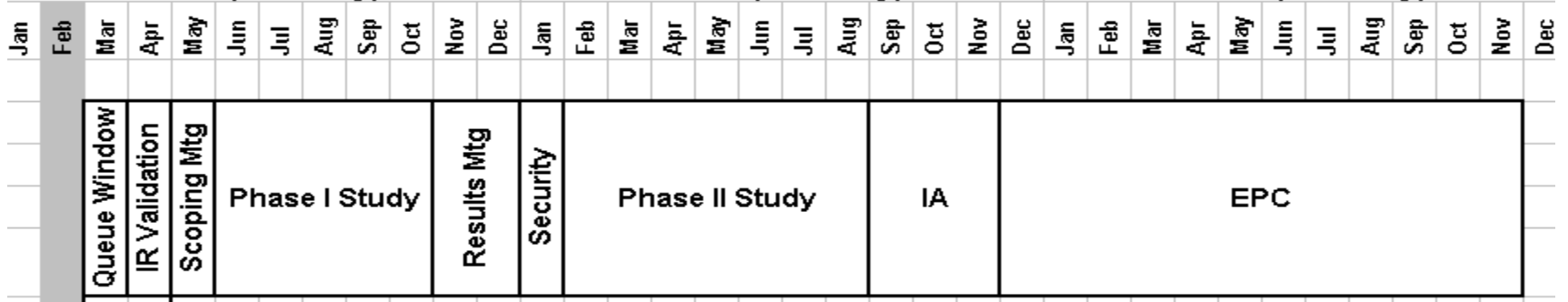


## Cluster Study Process

2011 (Monthly)

2012 (Monthly)

2013 (Monthly)



# Thank You

**For more information please contact  
Generation Interconnection Services at  
[wholesalegen@pge.com](mailto:wholesalegen@pge.com)**

