

# Combined Heat and Power (“CHP”) Request for Offers

**Participants’ Webinar**

**March 14, 2013**

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# Agenda

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## Topics:

- Introduction
- CHP Settlement Overview
- Solicitation Overview
- Offer Submittal Process
- Offer Form Highlights
- Evaluation Methodology
- Supplier Diversity
- Gas Interconnection
- Electric Interconnection
- Overview of PPAs
- Break
- Q & A

## Presenter:

- Rich Miram
- Rich Miram
- Rich Miram
- Holly Sweeting
- Holly Sweeting
- Rich Miram/Yumi Oum
- Jerilyn Gleaves
- Jeff Ryan
- Justin Bieber/Larry Doleman
- Hugh Merriam
- Rich Miram and Team

# Q&A Questions Instructions

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- Questions will be answered at the end of the Webinar
- Participants on the web or on the phone should email their questions to the CHPRFO mailbox at [CHPRFO@pge.com](mailto:CHPRFO@pge.com)
- After the Webinar, PG&E will compile and post a Q&A document on PG&E's website at: [www.pge.com/rfo](http://www.pge.com/rfo)
  - Responses will be posted, at PG&E's discretion, on PG&E's website along with the recorded presentation

# Document Conflicts

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- This presentation is intended to be a summary level discussion of the information and requirements established in the RFO materials (it does not include all of the detailed information in the RFO materials)
- To the extent that there are any inconsistencies between the information provided in this presentation and the requirements in the RFO materials, the RFO materials shall govern

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# CHP Settlement Overview

# CHP Program Settlement Agreement

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- **Initial Program Period**

- 4 years from Settlement Effective Date (November 23, 2011)
- Each IOU to conduct RFOs exclusively for CHP Resources to achieve MW targets and GHG Emissions Reduction Targets for Second Program Period
- 3 CHP RFOs to meet CHP MW targets during Initial Program Period
  - PG&E's first CHP RFO issued December 7, 2011, and concluded in January 2013.
- PG&E's total CHP MW Target is 1,387 MWs
- RFOs are a key component and venue for meeting CHP MW Targets; other alternatives also available

# PG&E's CHP MW Targets

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CHP MW Targets	
MW Target A:	630 MW
MW Target B:	376 MW
MW Target C:	381 MW
Total	1,387 MW

# Framework and Approach for PG&E's CHP RFO

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- **Similar to PG&E's other Solicitations**
- **Resource Types:**
  - Existing CHP
  - New CHP
  - Repowered CHP
  - Expanded CHP
  - Utility Prescheduled Facility (Utility Tolling)
  - Capacity-only CHP



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# CHP Solicitation Overview

# CHP #2 RFO Schedule

Date/Time 2013	Event
February 20, 2013	PG&E's CHP RFO 2 issued
March 6	Deadline for Participants with new and expanded CHP Facilities to Submit Preliminary Application for Gas Service
March 14	General Participants' Webinar
March 28	Participants' Offer Form Webinar
April 25	PG&E Gas Operations completes and returns Preliminary Application for Gas Service
May 2	Deadline for PG&E to receive binding Offers by Friday, 1:00 P.M. Pacific Prevailing Time (PPT)
Week of July 1	Participants accept shortlist position, execute Confidentiality Agreement and post Offer Deposit (as applicable)  Participants provide information for confirming gas service for existing CHP and Utility Tolling Services
As - available	Date for filing CPUC approval for executed PPAs without material changes to pro-forma PPAs
Week of November 18	RFO Negotiations Concluded

# Independent Evaluator (IE)

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- **Primary role of the IE is to:**
  - Monitor RFO processes to ensure fair and equal treatment of all potential counterparties
  - Monitor evaluation processes to ensure PG&E has implemented methodology as described and that Offers are treated consistently
  - Report on RFO process and proposed transactions to CPUC when PPA is filed for CPUC approval
- **The IE performs an independent review of all proposals**
- **The IE may review all proposal data and monitor communications with Participants**
- **Monitors negotiations with shortlisted participants**
- **PG&E's CHP RFO IE: Wayne Oliver (Merrimack Energy)**

# Eligibility Requirements

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- **Nameplate larger than 5 MW that meets definition of:**
  - Cogeneration per CPUC Code 216.6
  - EPS per CPUC Code 8341
  - Cogeneration facility under CFR 292.205
- **CHP Facility as of September 2007 converting to Utility Tolling Facility**
- **CHP Facility must be located in California**
- **Term**
  - Up to 7 years for Existing CHP Facilities and Utility Tolling Facilities
  - Up to 12 years for Repowered, Expanded, and New Facilities meeting credit and collateral requirements

# Eligibility Requirements (continued)

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- **Term start dates**
  - within 24 months of PPA execution (Existing and Utility Tolling CHP Facilities)
  - within 36 months of CPUC approval (Expanded CHP Facility)
  - within 60 months of CPUC approval (New and Repowered CHP Facilities)
- **Pricing negotiated by the parties and stated in the executed PPA**
- **Bids with and without GHG Compliance Costs**
  - Options to include in capacity or VOM pricing
- **Credit and Collateral**
  - Will apply to New, Repowered, Expanded and Utility Tolling Facilities
  - Not required for Existing CHP Facilities, but may be requested by an IOU
- **Efficiency Performance and Obligations**
  - For CHP Facilities, Seller must meet throughout term of PPA for combined heat and power facilities.
  - Failure to meet may result in “Event of Default” if deficiency is not cured

# Eligibility Requirements (continued)

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- **Curtailement**
  - Reliability
  - Economic (optional)
  - PG&E also interested in Offers that provide firm curtailments rights that PG&E can exercise at its discretion
- **Participant accepting a position on PG&E's shortlist must execute a confidentiality agreement**

# Offer Variation

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- **One Offer for each Project, no more than two variations per Offer. Offers may vary by:**
  - Term
  - Price
  - Term Start Date
  - PPA Terms and Conditions
- **Pricing Variations**
  - Capacity Price (\$/kW-year)
  - Energy: \$/MWh or guaranteed heat rate (BTU/kWh) applied to PG&E City Gate or SoCal Gas gas price index
  - VOM: fixed or escalating

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# CHP Offer Submittal Process



# Offer Submittal

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- Offers must be received by May 2, 2013 at 1:00 P.M. (PPT)
- Participant must include two (2) hard copies of the introductory letter and two (2) duplicate, labeled flash drives
- Hand-delivery or mail delivery to:

**Combined Heat and Power RFO**  
**Attention: Energy Procurement, Rich Miram**  
**77 Beale Street, Mail Code B25J**  
**San Francisco, CA 94105**

- Electronic Documents must be in a format as specified in the Protocol Document
- By submitting an Offer in this RFO, each participant is required to abide by the terms, conditions and other provisions specified in Section V of the protocol document

# Offer Submittal: Due on May 2, 2013

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- Offer package must contain the information in the requested format. Each tab should be a separate folder on the flash drive in the order described.
  - Introductory letter
  - Tab 1: Fully Completed Offer Form(s): Appendix A
    - **Format: MS Excel** *Separate offer form is required for a project variation*
  - Tab 2: Project Description: Appendix B
    - **Format: MS Word**
  - Tab 3: Electrical Interconnection Information & Waiver: Appendix C1 and C2
    - **Format: MS Word**
  - Tab 4: Gas Interconnection Information & Waiver : Appendix D1 and D2
    - **Format: MS Word, PDF**
  - Tab 5: Credit and Finance Information: Appendix E1
    - **Format: MS Word**

# Offer Submittal: Due on May 2, 2013

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- Offer package must contain the information in the requested format. Each tab should be a separate folder on the flash drive in the order described.
  - Tab 6: Supplier Diversity Information: Appendix F1, F2
    - **Format: MS Word**
  - Tab 7: PPA Redline – Indicate no changes (if applicable): Appendix G1, G2 or G3
    - **Format: MS Word**
  - Tab 8: Clean PPA: Appendix G1, G2, or G3
    - **Format: MS Word**

# Offer Submittal (continued)

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- **PG&E will only consider submitted Offers that, as of the submittal deadline, are complete, conforming and contain all material terms**
  - **PG&E will notify Participants of material deficiencies (e.g. incomplete or incorrect documents) and will allow limited time to correct.**
- **Offers are firm. Participants required to submit complete PPA and be prepared to execute with minimal or no changes from PG&E.**
- **If Participant accepts shortlisting, PG&E can accept without further negotiation and parties execute PPA**

## **Offer Submittal:** Additional information due if shortlisted

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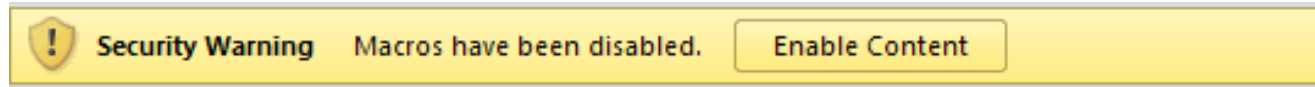
- Executed, Unmodified Confidentiality Agreement (Appendix H)
- Evidence of Site Control (if not already provided)
- Additional Transmission or Distribution Information (if applicable)
- Offer Deposit (as applicable)

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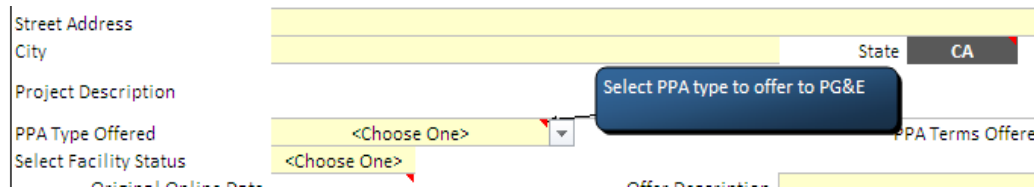
# Offer Form Highlights

# Offer Form – Instructions

- Be sure to **enable macros** when opening the form.



- Please refer to the Instructions tab which contains instructions and a description of the workbook structure.
- Color-coded data convention (yellow: mandatory fields, white: optional fields)
- Help captions are available when you place your cursor over a cell.

A screenshot of a form with several fields. The fields "Street Address", "City", "PPA Type Offered", and "Select Facility Status" are highlighted in yellow, indicating they are mandatory. The "State" field is set to "CA". A blue tooltip with the text "Select PPA type to offer to PG&E" is pointing to the "PPA Type Offered" dropdown menu, which currently shows "<Choose One>". Other fields include "Project Description", "PPA Terms Offered", and "Offer Description".

- Please make sure to fill out the Electronic Signatures tab prior to submitting offer to PG&E.
- Save the offer form workbook with a unique file name. **Eg:company\_resource\_offer\_1.xls**

# Electronic Signatures

**Attestation**  
By providing the electronic signature, below, Participant hereby attests that all information provided in this Offer Form and in response to this RFO is true and correct to the best of Participant's knowledge as of the date such information is provided.

Electronic Signature:  Select "Yes" to certify that typed name acts as electronic signature:

**Participant Authorization**  
By selecting "Yes", participant hereby confirms that they are "a duly authorized representative of Participant."

Electronic Signature: John Smith Select "Yes" to certify that typed name acts as electronic signature:

Once cell information is inputted, missing input counter will reduce count by one.

*There are 71 missing inputs. Please fill in all yellow highlighted cells on the 'Product Description' tab.*

ct currently under contract?  Was this project of

Cells highlighted in yellow are mandatory to fill in.

**Counterparty Information**

Counterparty Name	<input type="text"/>
Street Address	<input type="text"/>
City	<input type="text"/>
State	<input type="button" value=" &lt;Choose&gt;"/>
Zip Code	<input type="text"/>



# Project Description Tab



Each Offer Form generates a unique Bid ID

## Appendix A1 - Participant Proposal Project Description

### General Offer Information

Total Offers		Offers Source	CHP
Offer #		Solicitation #	2
Variant	<Choose>	Bid ID	Ori_2012

### Project Information

Full Project Legal Name		
Project Location		
Street Address		
City		Zip Code
Project Description		
PPA Type Offered	<div style="border: 1px solid black; padding: 2px;">             Hybrid (Proforma / Tolling)             <ul style="list-style-type: none"> <li>&lt;Choose One&gt;</li> <li>CHP Proforma</li> <li>Conversion to Utility Tolling</li> <li>Hybrid (Proforma / Tolling)</li> <li>CHP Capacity Only</li> </ul> </div>	Offer Description Offered (months)
Select Facility Status		
Original Online Date	QF	
Construction Start Date		
Contract Start Date		

Drop-Down selection determines whether Proforma, Tolling or CHP Capacity Only tabs are visible

### Additional Information on Existing QF Projects

QFID Number		Other information for PG&E to identify the QF
Date Existing PPA will Terminate		
Operating Standard Percentage (2007)		
Efficiency Standard Percentage (2007)		

### Facility Configuration

Topping or Bottoming CHP	<Choose One>	# of Identically Sized Prime Mover Units
Wet or Dry Cooling	<Choose One>	Prime Mover Name Plate Capacity
Name Plate Capacity	MW	Number of Steam Turbine Generators
Prime Mover	<Choose One>	Steam Turbine Name Plate Capacity
Prime Move Other		

# Project Information Tab (continued)


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- **Project / Facility Information**
- **Configuration (type of generating technology)**
- **Fuel (type)**
- **Emissions**
- **Steam host description and efficiency**
- **Electrical Interconnection**
- **Gas Interconnection (as applicable)**

# Historical Efficiency & GHG Emissions for Two Calendar Years

This Appendix A6 – Historical Operating Data is visible if you have chosen

- 1. Existing
- 2. Repowered
- 3. Expanding Facilities



### Appendix A6 - Historical Operating Data

The following data will be used to evaluate the facility's potential contribution to the GHG Emission Reduction Targets (Section 6 of the CHP Program Agreement Settlement Term Sheet)

Calendar Year	Month	Number of Operating Hours	Thermal Input (MMBTU) <sup>1</sup>	Electrical Energy delivered to grid (MWh) <sup>2</sup>	Electrical Energy delivered to host load (MWh)	Total Useful Thermal Output (MMBTU) <sup>3</sup>	Calculated Efficiency (do not overwrite)	GHG Emissions (metric tonnes)
							0.00%	
							0.00%	
							0.00%	
							0.00%	
							0.00%	
							0.00%	
							0.00%	

# CHP Proforma PPA

## Data format aligned closely with Attachment A, Exhibit 5: CHP Request For Offers Pro-Forma PPA for CHP Facilities Participating in Solicitations from the Settlement Agreement.



Appendix A2 - Proforma PPA

There are 24 missing inputs. Please fill in all yellow highlighted cells on the 'Proforma PPA' tab.

### General

If Seller will change facility operations, please describe changes to steam host, addition of auxiliary boilers, or other changes.

### Pricing / Contract Capacity / Contract Heat Rate / Credit Requirements

Firm Capacity Pricing Plan  Expected term year production (MWh)  MWh

Escalation Rate

As-Available Capacity Pricing Plan  Select gas index for service area.  If applicable, please describe the proposed GHG allocation

Escalation Rate

Variable Charge per MWh Pricing Plan

Escalation Rate

Contract Year	Buyer assumes GHG Compliance Costs			Seller assumes GHG Compliance Costs			Buyer and Seller allocate GHG Compliance Costs		
	Firm Capacity Price (\$/kW-yr)	As-Available Capacity Price (\$/kW-yr)	Variable Charge per MWh delivered (\$/MWh)	Firm Capacity Price (\$/kW-yr)	As-Available Capacity Price (\$/kW-yr)	Variable Charge per MWh delivered (\$/MWh)	Firm Capacity Price (\$/kW-yr)	As-Available Capacity Price (\$/kW-yr)	Variable Charge per MWh delivered (\$/MWh)
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									

Month	Contract Capacity		
	Monthly Firm Capacity (MW)	As-Available Contract Capacity (MW)	Net Contract Capacity (MW)
January			0.00
February			0.00
March			0.00
April			0.00
May			0.00
June			0.00
July			0.00
August			0.00
September			0.00
October			0.00
November			0.00
December			0.00

Season	TOD Period	Contract Heat Rate	
		Heat Rate (Btu/kWh)	
Summer	Peak		
	Partial Peak		
	Off Peak		
Winter	Super Off Peak		
	Partial Peak		
	Off Peak		
	Super Off Peak		

### Seller Credit Requirements

Development Security S  Development

(as applicable) Security Type

Performance Assurance S  Performance

(as applicable) Assurance Type

### Notes

- (1) The Capacity Payment shall be calculated pursuant to Exhibit D, Section 3 (TOD Period Capacity Calculation) of the Proforma CHP PPA.
- (2) Energy Pricing to be calculated per Exhibit D of the Pro Forma CHP PPA.

# CHP Proforma PPA (continued)

Offer form includes the standard curtailment option of the CHP Form PPA and a proposed PG&E curtailment option

## Curtailment / Overhaul / Maintenance

### Seller Curtailment Options

At your option, you may offer PG&E curtailment rights under the PPA. PG&E will include the market value of these curtailment options in evaluating offers.

Seller may optionally provide a curtailment option.

<Choose One>
<Choose One>
Standard Proforma PPA
<b>PG&amp;E Alternate - Firm Curtailment at Buyer Discretion</b>
Other Seller Proposal
None

If Seller proposes other curtailment option, describe.

Standard Proforma PPA<sup>1</sup> (Exhibit U - Economic curtailment option for negative pricing in the day-ahead market)

Calendar Quarter	Curtailment Period Cap		
	On Peak (MW <sup>h</sup> ) <sup>2</sup>	Off Peak (MW <sup>h</sup> ) <sup>3</sup>	Total (MW <sup>h</sup> )
January-March			0.0
April - June			0.0
July-September			0.0
October - December			0.0
<b>Total (MW<sup>h</sup>)</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

PG&E Alternate Curtailment Proposal - Firm Curtailment at Buyer Discretion

Month	Max MW / Hour
January	
February	
March	
April	
May	
June	
July	
August	
September	
October	
November	
December	

Total number of curtailment hours offered per Contract

### PG&E Alternate Curtailment

- (1) Curtailments shall be at Buyer's discretion.
- (2) Seller's availability shall be at Buyer's discretion.
- (3) Curtailment hours shall be at Buyer's discretion.
- (4) PG&E will pay the market value of the curtailed capacity.

### Standard Proforma Notes

- (1) Buyer has the right, but not the obligation, to request that Seller curtail the facility up to the specified MW<sup>h</sup>s in the above table.
- (2) On Peak means Peak and Partial Peak
- (3) Off Peak means Off Peak and Super Off Peak

# CHP Proforma PPA – Expected Generation Profile over PPA term

## Profile used to evaluate market value

Weekday Generation Profile Hour Ending

Month	Maximum MW	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
1	0.00																								
2	0.00																								
3	0.00																								
4	0.00																								
5	0.00																								
6	0.00																								
7	0.00																								
8	0.00																								
9	0.00																								
10	0.00																								
11	0.00																								
12	0.00																								

Enter an expected MW level between 0 and Net Contract Capacity for the month.

Weekend/Holiday Generation Profile Hour Ending

Month	Maximum MW	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400
1	0.00																								
2	0.00																								
3	0.00																								
4	0.00																								
5	0.00																								
6	0.00																								
7	0.00																								
8	0.00																								
9	0.00																								
10	0.00																								
11	0.00																								
12	0.00																								

# Tolling PPA – Pricing

**Pricing / Compensation / Credit Requirements**

Capacity Payment Pricing Plan <Choose One> Escalation Rate <Choose One>  
 Variable Charge per MWh Pricing Plan Fixed Escalating Escalation Rate  
 Fixed O&M Pricing Plan <Choose One> Escalation Rate

Fired Hour Charge Price Plan <Choose One> Escalation Rate  
 Start-up Payment Pricing Plan <Choose One> Escalation Rate

Contract Year	Buyer assumes GHG Compliance Costs		Seller assumes GHG Compliance Costs		Buyer & Seller allocate GHG Compliance Costs		Fixed O&M (\$/kW-yr)	Fired Hour Charge per Hour per Unit (\$/fired hr/unit)	Start-up Payment (\$) for Entire Facility			Start-up Payment (\$) for Single Unit			
	Capacity Payment Rate (\$/kW-yr)	Variable Charge per MWh delivered (\$/MWh)	Capacity Payment Rate (\$/kW-yr)	Variable Charge per MWh delivered (\$/MWh)	Capacity Payment Rate (\$/kW-yr)	Variable Charge per MWh delivered (\$/MWh)			Hot	Warm	Cold	Hot	Warm	Cold	
1															
2															
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

If Seller proposes an allocation mechanism for GHG risk, please describe.

Enter any startup cost details (if applicable)

**For existing facilities**

**Seller Credit Requirements**

Project Development Security \$ (as applicable) \_\_\_\_\_  
 Project Development Security Type <Choose One> \_\_\_\_\_

Pre-Delivery Term Security (\$) \_\_\_\_\_  
 Pre-Delivery Term Security Type <Choose One> \_\_\_\_\_

Delivery Term Security Offered (\$) \_\_\_\_\_  
 Delivery Term Security Type <Choose One> \_\_\_\_\_

# Tolling PPA – Operational Constraints

## Enter constraints from pre-defined list or other

Operating Constraints / Emissions / Maintenance				
Operating Constraints (for Entire Facility)				
<b>Constraint 1</b>				
Operating Constraint 1	<Choose One>			
Operating Constraint 1 Other				
Operating Constraint 1 Value				
Constraint 1 Period of Limitation	<Choose One>			
Constraint 1 Period of Limitation Other				
Is this a maximum or minimum	<Choose One>			
<b>Constraint 2</b>				
Operating Constraint 2		<Choose One>		
Operating Constraint 2 Other				
Operating Constraint 2 Value				
Constraint 2 Period of Limitation		<Choose One>		
Constraint 2 Period of Limitation Other				
Is this a maximum or minimum constraint?		<Choose One>		
<b>Constraint 3</b>				
Operating Constraint 3			<Choose One>	
Operating Constraint 3 Other				
Operating Constraint 3 Value				
Constraint 3 Period of Limitation			<Choose One>	
Constraint 3 Period of Limitation Other				
Is this a maximum or minimum			<Choose One>	
<b>Constraint 4</b>				
Operating Constraint 4		<Choose One>		
Operating Constraint 4 Other				
Operating Constraint 4 Value				
Constraint 4 Period of Limitation		<Choose One>		
Constraint 4 Period of Limitation Other				
Is this a maximum or minimum		<Choose One>		
<b>Constraint 5</b>				
Operating Constraint 5			<Choose One>	
Operating Constraint 5 Other				
Operating Constraint 5 Value				
Constraint 5 Period of Limitation			<Choose One>	
Constraint 5 Period of Limitation Other				
Is this a maximum or minimum constraint?			<Choose One>	
<b>Constraint 6</b>				
Operating Constraint 6			<Choose One>	
Operating Constraint 6 Other				
Operating Constraint 6 Value				
Constraint 6 Period of Limitation			<Choose One>	
Constraint 6 Period of Limitation Other				
Is this a maximum or minimum constraint?			<Choose One>	
Enter any other Constraints (free text)				
<b>Ancillary Services</b>				
Facility is AGC Capable?	<Choose>	Spinning Reserve Capacity		MW
MW Range (Regulation)	Yes / No	Non-Spinning Reserve Capacity		MW



# Tolling PPA – Operations

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- **Contract Capacity at ISO, Peak July, and typical monthly conditions**
- **Ancillary Services Capability**
- **Heat rates by generation level and temperature conditions**
- **Degradation schedules as function of Equivalent Operating Hours for Capacity and Heat Rate**
- **Forced Outage Rates, Starting and Shutdown characteristics**

# Capacity Only PPA

Enter pricing plan and capacity payments where Buyer (PGE) and Seller (Participant) assumes GHG Risk

**Pricing / Credit Requirements / Emissions / Maintenance**

CHP Capacity Only Pricing Plan

Escalation Rate

Contract Year	Capacity Payment Rate (\$/kW-year)		
	Capacity Payment Rate (\$/kW-yr) (Buyer assumes GHG Compliance Costs)	Capacity Payment Rate (\$/kW-yr) (Seller assumes GHG Compliance Costs)	Capacity Payment Rate (\$/kW-yr) (Buyer and Seller allocate GHG Compliance Costs)
1			
2			
3			
4			
5			
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7			
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10			
11			
12			

If Seller proposes an allocation mechanism for GHG risk, please describe.

**Seller Credit Requirements**

Project Development Security S (as applicable)

Project Development Security Type

Pre-Delivery Term Security (\$)

Pre-Delivery Term Security Type

Delivery Term Security Offered (\$)

Delivery Term Security Type

**APPENDIX IV - FIXED PAYMENT ALLOCATIONS BY MONTH**  
 The below table from Appendix IV of the PPA includes monthly allocation factors that will be applied to the Capacity Payments and Fixed O&M.

Month	Allocation %
January	8.00%
February	5.00%
March	4.00%
April	4.00%
May	4.00%
June	8.00%
July	14.00%
August	15.00%
September	11.00%
October	9.00%
November	9.00%
December	9.00%



# Maintenance Schedule

All PPAs will require Participant to complete Facility Maintenance Hours

## Major Overhaul Schedule

Start date of major overhaul 1  ▼  
 (nonbinding)  
 Enter estimated number of days for the overhaul.  ▼  
 Start date of major overhaul 2  ▼  
 (nonbinding)  
 Enter estimated number of days for the overhaul.  ▼

## Maintenance Outage Schedule (excluding major overhauls)

Month	Peak Hours	Non-Peak Hours	Total
January			0.0
February			0.0
March			0.0
April			0.0
May			0.0
June	No Maintenance Outages during this period		0.0
July			0.0
August			0.0
September			0.0
October			0.0
November			0.0
December			0.0
<b>Totals</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>

### Maintenance Notes

- (1) Maximum of 550 Maintenance Outage hours per year
- (2) Maximum of 12 Offpeak maintenance hours per Peak Month where peak months are from June through September.

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# Evaluation Methodology

# Steps for Shortlisting

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- Evaluate all valid offers
- Transmission Cost
  - No transmission costs added for Existing CHP, Existing CHP converting to Utility Tolling and Capacity-only CHP
  - Transmission costs for New, Expanded and Repowered CHP using proxies from Transmission Ranking Cost Report (TRCR) or electric interconnection studies, if available
- Ranking for Shortlisting
  - Shortlist rankings are relative
  - No fixed cut-off price
  - Based on quantitative and qualitative factors
  - Shortlisting is no guarantee that PPA will be executed

# Evaluation Criteria

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- Ranking based on combination of quantitative and qualitative factors
- Quantitative Evaluation
  - Market Valuation including GHG costs
  - Transmission Adders (where applicable)
  - Portfolio Adjusted Value
  - GHG Emissions Reductions
- Qualitative Evaluation
  - Project Viability and Technical Reliability
  - Credit
  - Supplier Diversity
  - Adherence to form PPA terms and conditions

# Market Valuation

**Market Value = Energy benefit + Capacity benefit  
+ Curtailment Value – Offer's cost, where**

- **Energy benefit** is based on
  - market prices, Locational Marginal Pricing (LMPs) multipliers, volatilities, and correlations as necessary
- **Capacity benefit** is based on
  - PG&E's internal estimate of forward prices for flexible and non-flexible capacity, and
  - offer's contribution to PG&E's future Resource Adequacy requirements
- **Curtailment Value** is based on
  - the market price of energy and the curtailment price
  - amount of curtailment offered
- **Offer's cost** is based on
  - the offer energy pricing (such as heat rate, Variable O&M, startup cost) and capacity pricing
  - GHG cost
  - Debt Equivalence cost



# Transmission Adders (New, Repowered, Expanded CHP)

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- **Generator Cost responsibility – Include in bid price**
  - Direct Assignment Facilities (e.g. Gen-tie)
  - Wheeling Charges to Delivery Point
- **Customer Cost Responsibility – Considered in bid evaluation**
  - Distribution and Network Upgrades
  - Costs estimates from
    - Interconnection Process (Phase 1/Phase 2 Studies or SIS/FAS Studies)
    - Transmission Ranking Cost Report

# Portfolio Adjusted Value

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- Intended to represent value of resource in the context of PG&E's portfolio – Market Valuation determines value of resource regardless of PG&E's portfolio
- Determined by making adjustments to Market Valuation such as
  - Location adjustment
  - Energy firmness adjustment
  - Curtailment
  - Transmission cost adjustment
  - Termination value of existing contract with PG&E (if applicable)
  - Contribution to the PG&E's CHP MW Target

# GHG Emissions

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**GHG Emission Reduction is determined by each offers' contribution to the PG&E's GHG Emissions Reductions Goal as calculated in Section 7.3.1 of the Settlement Agreement**

- **New CHP Facilities:** evaluated compared to the Double Benchmark (8,300 BTU/kWh heat rate and 80% thermal efficiency)
- **Physical Change from a Repowered CHP Facility:** measured by the GHG emissions difference between
  - The average of the previous two calendar years of operational data compared to the Double Benchmark, and
  - Anticipated changes in operations compared to the Double Benchmark
- **CHP Facility Change in Operations or a conversion to a Tolling Facility:** based on:
  - The average of the previous two calendar years of operational data, less
  - the PPA emissions and emissions associated with replacing 100% of the decreased electric generation at a time-differentiated Market Heat Rate.

# Project Viability and Technical Reliability

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- **Company/Development Team**

- Project development experience, EPC experience, Ownership and O&M experience

- **Technology**

- Technical feasibility, Resource quality, Manufacturing supply chain

- **Development Milestones**

- Site control, Permitting status
- Project financing status
- Interconnection progress, Transmission requirements
- Reasonableness of COD (Commercial Operation Date)

# Project Viability and Technical Reliability (con't)

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- **Assess likelihood that Project will meet:**
  - Performance requirements
  - Efficiency requirements
  - CHP Facility maintains steam host requirements and obligations
- **Emissions characteristics**

# Credit

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- **Willingness to comply with the Settlement Agreement requirements**
- **Evaluated on:**
  - Total amount of Development Security
  - Performance Assurance
  - Form and quality of Security offered

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# Supplier Diversity

# PG&E's Commitment to Supplier Diversity



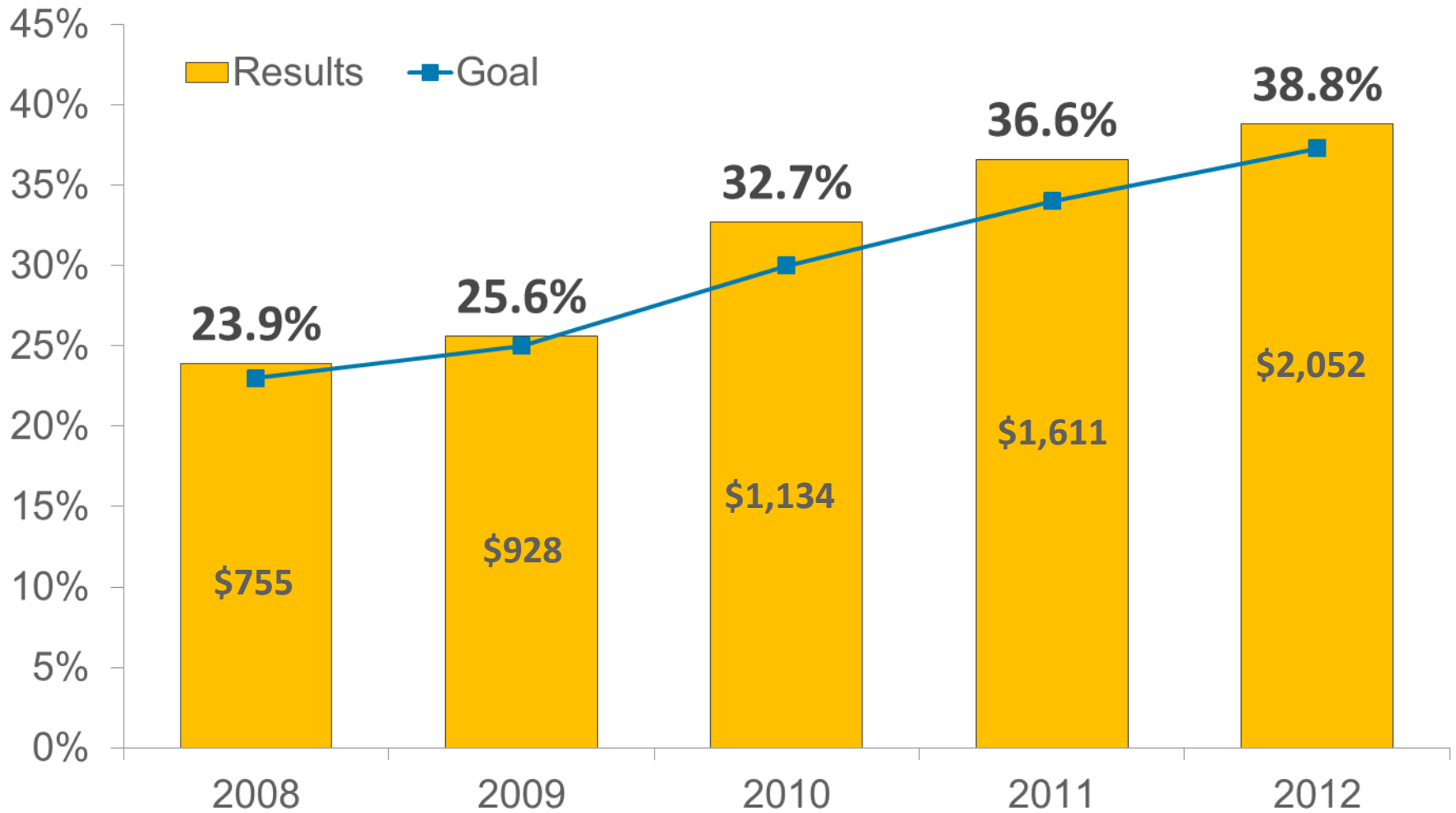
Chris Johns  
President  
Pacific Gas and Electric Company

As I reflect on our Supplier Diversity program's evolution, I couldn't be more proud of our progress. We've made great strides in helping diverse suppliers increase the volume of their businesses and expand into new lines of business, while collaborating with our community partners to support their long-term development and success. Our efforts have culminated in a decade-long trend of consecutive year-over-year growth. With the development of smart grid and the emergence of new technologies, we are also focused on helping DBEs prepare to compete in a changing supply chain. All of this brings us the benefit of new and innovative ideas, creative solutions to the challenges we face, broader competition from within our supplier community and more vibrant communities in which we live and work.

As we work to earn our customers' trust through excellent operations, we know that our diverse suppliers will continue to play an essential role. We are pleased to report on our efforts from the past year, and we look forward to building on those efforts in the year ahead.



# 5-Year Supplier Diversity Trend (\$M)



# Supplier Diversity Considerations

## Supplier Diversity solutions include:

- Value Added Reseller
- Joint Ventures
- Partnerships
- Mentorship/Supplier Development

### PROGRAM

Complete a Supplier Diversity questionnaire describing your SD Program.

### CERTIFICATION

Indicate whether your company is a CPUC Clearinghouse certified.

### SUBCONTRACTING

Indicate plans to include DBEs during project development and operation.

DBE = Diverse Business Enterprise

# Certification

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- **Certification is a formal, standardized process to validate whether an applicant is at least 51 percent owned and controlled by minorities and/or women**
- **Requirements**
  - Applicant must submit an application in its entirety including supporting documents.
  - The applicant must be at least 51 percent owned and controlled by minorities and women. Department of General Services (DGS) has the same requirement for service disabled veteran-owned businesses.
- **If a supplier holds a certification from the National Minority Supplier Development Council (NMSDC) or Women's Business Enterprise National Council (WBENC), the supplier can apply using the streamlined comparable agency certification process.**

# Concluding Points

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- PG&E is committed to supplier diversity; it is inherent in our values and critical to our success.
- We are interested in innovative solutions to achieving supplier diversity goals and objectives.
- Supplier Diversity tools and resources are available to help you increase DBE participation.

# Resources

<ul style="list-style-type: none"> <li>● <b>PG&amp;E Supplier Diversity Contact:</b></li> </ul>	<p>Jerilyn Gleaves</p>
<ul style="list-style-type: none"> <li>● <b>California Public Utilities Commission (CPUC) Supplier Clearinghouse:</b></li> </ul>	<p><a href="http://www.cpuc.ca.gov/PUC/SupplierDiversity/clearing.htm">www.cpuc.ca.gov/PUC/SupplierDiversity/clearing.htm</a></p>
<ul style="list-style-type: none"> <li>● <b>National Minority Supplier Development Council (NMSDC):</b></li> </ul>	<p><a href="http://www.nmsdc.org">www.nmsdc.org</a></p>
<ul style="list-style-type: none"> <li>● <b>Women’s Business Enterprise National Council (WBENC):</b></li> </ul>	<p><a href="http://www.wbenc.org">www.wbenc.org</a></p>
<ul style="list-style-type: none"> <li>● <b>Department of General Services (DGS):</b></li> </ul>	<p><a href="http://www.pd.dgs.ca.gov">www.pd.dgs.ca.gov</a></p>
<ul style="list-style-type: none"> <li>● <b>Local Chambers of Commerce:</b></li> </ul>	<ul style="list-style-type: none"> <li>• Asian Business Association</li> <li>• Black Business Association</li> <li>• Latin Business Association</li> <li>• National Association of Women Business Owners</li> <li>• National Center of American Indian Development</li> <li>• Purchasing Councils</li> </ul>

# Consultation with PRG/CAM and IE

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- **PRG: Procurement Review Group**
- **CAM: Cost Allocation Mechanism Group**
- **Discuss proposed shortlist and evaluation methodology**
- **Solicit feedback on whether certain offers should be included and whether certain offers should be excluded**
- **Incorporate feedback and finalize shortlist**

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# Gas Interconnection

# Gas Interconnection

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- **Preliminary Application for Gas Service for New or Expanded CHP Facilities**
- **Confirming Gas Service for Existing CHP and Utility Tolling facilities**



# New or Expanded Gas Interconnections with PG&E

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- If Participant missed the March 6, 2013 deadline to request for New or Increased Demand with PG&E, Participant may not participate in this CHP RFO. Participant is encouraged to submit application for new gas service when ready and prepare to submit offer in a subsequent CHP RFO.
- For projects that have already obtained a response for a Preliminary Application for Gas Service within the past 12 months, the Participant shall submit copies of the completed studies and a completed Appendix D3 with the Offer.

# Existing Gas Interconnections With PG&E

- Participants who have an existing gas interconnection with PG&E and do not require increased gas service must provide the following information if their Offer is shortlisted:
  - Map showing PG&E service interconnection point and meterset location
  - Meterset number
  - Start date, term and end date of gas service agreement
  - PG&E billing number
  - The additional information described in Appendix D1
- If an Offer involves an existing CHP Facility or Utility Tolling Facility with an existing interconnection and does not require additional gas service, Participant must also provide the following information with its Offer is shortlisted:
  - Copy of existing Natural Gas Service Agreement or equivalent if not connected to PG&E's gas transmission system
  - Rate Schedule pursuant to which existing CHP facility receives gas service
  - A list of transportation charges applicable to the existing CHP facility

# Gas Interconnections Outside PG&E's Gas Transmission System

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- Participants who do not take service from PG&E's California Gas Transmission ("CGT") must demonstrate comparable initiation with their local gas service provider.
- The Participant is responsible for the cost of each interconnection study or application and for obtaining all required information from the gas service provider, including all related documents and studies with the Offer.
- Participant's failure to provide the information necessary to complete its application for gas interconnection service may result in its Offer disqualification.

# Gas Interconnection Information

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Electronic copies of the Application for Gas Transmission Service and Agreement to Perform Tariff Schedule Related Work are available online at:

<http://www.pge.com/b2b/newgenerator/wholesalegeneratorinterconnection/gasinterconnections/>

The Application including the initial cash advance made out to PG&E should be delivered to:

**Pacific Gas and Electric Company**  
**Attn: Roger Graham**  
**Wholesale Marketing and Business Development,**  
**6121 Bollinger Canyon Road, 4<sup>th</sup> Floor**  
**San Ramon, CA 94583**

Electronic copies should also be sent to Jeff Ryan, at [jgr4@pge.com](mailto:jgr4@pge.com).

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# Electric Interconnection

# Interconnection Agreements (IA)

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## *New and Existing Producers*

Interconnection Agreement establishes the costs, milestones, and terms and conditions for providing interconnection facilities and network upgrades connecting a generating facility with the PG&E system.

Power Purchase Agreements (PPA) and Interconnection Agreements (IA) are two separate agreements

- Separate PG&E functions: The PPA and IA will be negotiated separately by different departments.

## *Existing Producers*

Generally, a separate, new IA must be initiated 6 months in advance of PPA expiration to avoid a disruption of service.

# CAISO Requirements for All PPAs

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## Seller Obligations:

Prior to the commencement of energy deliveries, Sellers must provide PG&E with copies of the following:

- **New Interconnection Agreement** between PG&E, Seller, and potentially the CAISO
- **Participating Generator Agreement (PGA)** between Seller & the CAISO
- **Meter Service Agreement (MSA)** between Seller & the CAISO

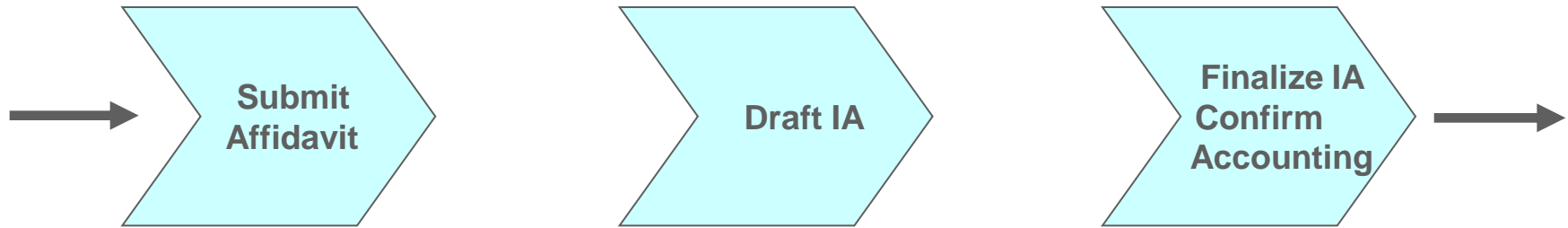
# Interconnection Agreement Governing Tariffs

Obligation: To remain interconnected or to interconnect new generators, an applicable IA must be executed:

Distribution Generators	<b>Wholesale Distribution Tariff (WDT)</b>
Transmission Generators	<b>CAISO</b>



# Interconnection Agreement: Process for Existing CHP and Utility Tolling Arrangements



## Affidavit-like Process

- Confirm no material modification
- Research As-Is
  - SFAs
  - Job Estimates
  - Accounting
- Submit to CAISO for transmission and PG&E for distribution

## Draft IA

- Ensure new IA includes all existing facilities required to facilitate interconnection
- Ensure new IA accurately reflects accounting

## Finalize IA

- Ensure all parties agree (PG&E, Customer, and CAISO if transmission)
- Make adjustments to accounting

This process may be lengthy. Please plan for ~6 months and begin process soon

# Interconnection Agreement: Materials Needed for Existing CHP and Utility Tolling

## Information to expedite the IA process for PG&E and to ensure accuracy

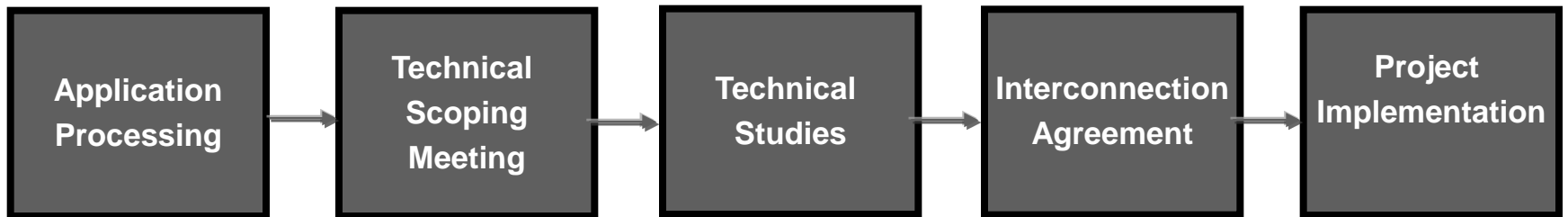
- Affidavit attesting to same output as original agreement
- Original and any subsequent Special Facilities Agreements (SFAs):
  - “Agreement for Installation or Allocation of Special Facilities for Parallel Operation of Non-utility-owned Generation and/or Electric Standby Service (Electric Rules No. 2 and 21)”
- Job Estimate for existing interconnection provided by PG&E
- The latest bill for the Monthly Cost of Ownership Charge (the monthly Operation & Maintenance costs)
- Any project name or ownership changes after execution of Original SFA

# Interconnection Process – *New Producers*

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<b>New Producers or Expanding Facilities or Repowered Facilities</b>	<b>New Application SIS Study or Cluster Study</b>	<b>New Interconnection Agreement</b>
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# Wholesale Generation Interconnection Process



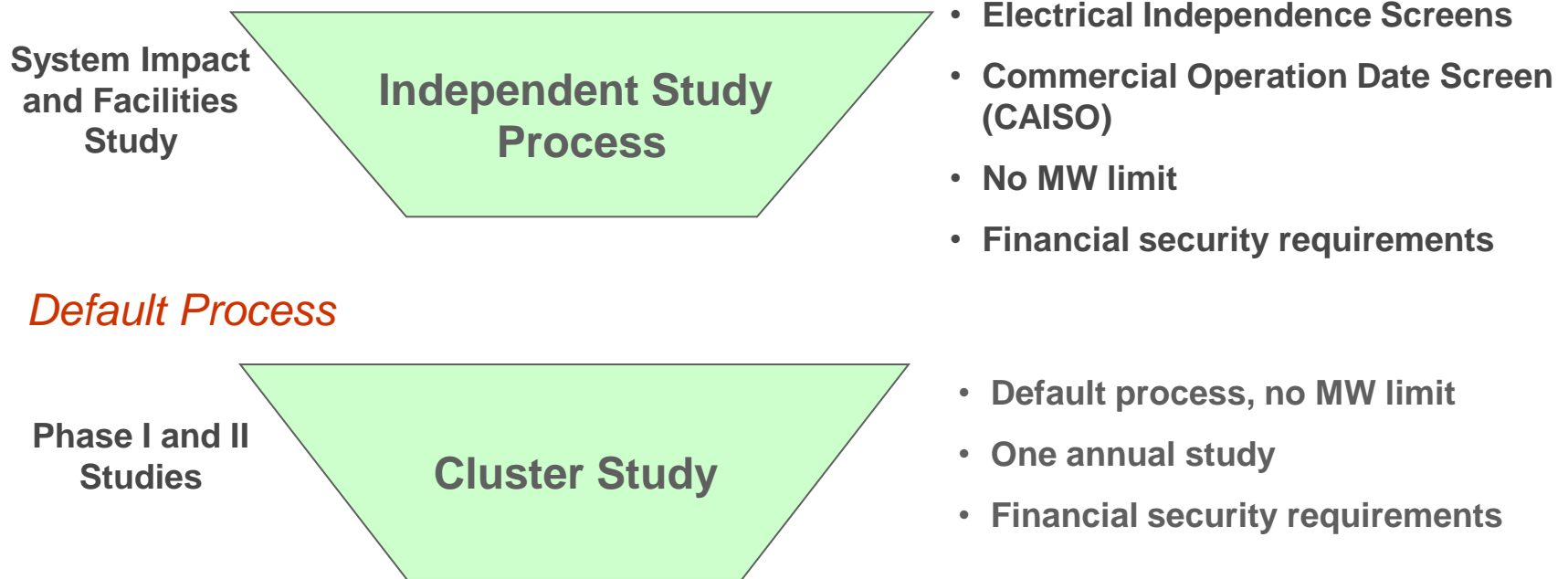
## Transmission Interconnections

- 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

## 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.

# Wholesale Interconnection Study Processes – *New Facility* (IOU processes vary slightly)



- 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.

# Independent Study Schedule – Application through Final Study

CAISO Process applies to SCE and SDG&E as well, IOU processes vary slightly

Independent Study	Window	SIS	FAS	Interconnection Agreement	Timeline
CAISO* connections	No Window	90 BD	90 BD	~4 months	~12 months
PG&E connections	No Window	60 BD	60 BD	~4 months	~12 months

BD - Business Days  
 SIS – System Impact Study  
 FAS – Facilities Study

# Post-Interconnection Agreement – Next Steps

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- With an Interconnection Agreement, PG&E and Interconnection Customer will be engineering and designing, procuring, and constructing (*EPC*) the electrical interconnection
  - PG&E will engineer the Capital Improvements as agreed upon in the Interconnection Agreement
  - Interconnection Customer will engineer the electrical system on the Interconnection Customer's side of the meter and any upgrades that will be applicant built and deeded (if required)
- With EPC complete, PG&E, CAISO (if applicable), and Interconnection Customer will coordinate a pre-parallel inspection and commissioning to achieve Commercial Operation
- Timing for implementation is project specific and could take from 6 months to 4 years

# Interconnection Agreement Process: New, Repowered and Expanded CHP Facilities

For new facilities or facilities that make material modifications, please follow and complete the Generator Interconnection Procedure.

For assistance in determining what is considered a material modification, please consult PG&E for distribution interconnections and the CAISO for transmission interconnections.

For new generators or generators determined to be material modifications, please refer to the Generator Interconnection Procedures overview:

[http://www.pge.com/includes/docs/pdfs/b2b/newgenerator/wholesalegeneratorinterconnection/Generator\\_Interconnection\\_Procedures\\_Overview.pdf](http://www.pge.com/includes/docs/pdfs/b2b/newgenerator/wholesalegeneratorinterconnection/Generator_Interconnection_Procedures_Overview.pdf)



# Interconnection Agreement: Contact Information

Contacts for Interconnection Information or to Begin the QF Conversion Process

## •CAISO-controlled Grid Interconnections:

- Leslie Feusi – Lead Interconnection Specialist, Interconnection Information
  - (916) 351-2330, email: [lfeusi@caiso.com](mailto:lfeusi@caiso.com)
- Brij Basho, Contract Negotiator Lead, QF Conversion Process
  - (916) 608-7136, email: [bbasho@caiso.com](mailto:bbasho@caiso.com)

## CAISO's Wholesale Interconnection Website

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

## •Non-CAISO Controlled Grid (distribution) Interconnections:

### PG&E - Generation Interconnection Services

- [gen@pge.com](mailto:gen@pge.com)

### PG&E's Wholesale Interconnection Website

- <http://www.pge.com/b2b/newgenerator/wholesalegeneratorinterconnection/index.shtml>

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# Overview of PPAs

# Overview of CHP RFO Proforma PPA

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- **Proforma Power Purchase Agreement**
- **Negotiated through a multiparty stakeholder process and approved by the CPUC through the QF/CHP Settlement**
  - **Material changes to the PPA may lower a participants rank in shortlisting**
- **Expedited CPUC Approval - IOUs will utilize a Tier 2 Advice Letter for Existing CHP Facilities that executed a CHP RFO Proforma PPA without material modification**
- **For CHP facilities greater than 5 MW, structured for baseload CHP product**
  - **If converting to a Utility Prescheduled Facility or proposing a hybrid arrangement, use the Utility Tolling PPA**

# Overview of CHP RFO PPA (continued)

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- **Term:** Up to 7 years for existing or expanded capacity; Up to 12 years for new or repowered capacity; expanded facilities electing to satisfy credit/collateral terms may also qualify for a 12 year contract
- **Pricing:** According to offer prices agreed to by the parties
- **Seller to submit offer with and without responsibility for CO<sub>2</sub> emissions**
- **Project Development Security - For New, Repowered, and Certain Expanded**
  - \$20/kW, 30 days after Effective Date of contract
  - \$60/kW, 18 months after Effective Date of contract
- **Performance Assurance for new or repowered facilities**
  - 12 months capacity payments; 5% of revenues
- **Curtailement for system emergencies or limited economic conditions**

# Overview of Utility Tolling PPA

- Form is structured as natural gas fired tolling
  - Alternative structures should adjust form accordingly
  - Minimize edits to reflect operational characteristics
- Key Features:
  - Delivery Term: Up to 7 years for existing CHP Facility converting to tolling.
  - Gas Supply: PG&E provides all fuel for facility, or as may be negotiated.
  - Exclusivity: PG&E has exclusive rights to all capacity, output and dispatch, including participation in all CAISO markets.
  - Scheduling and Balancing: PG&E is Scheduling Coordinator (SC) for facility. Costs for schedule deviations passed through to Seller.
  - Guaranteed Heat Rate: To be provided by Seller.
  - Compensation: Capacity, Fixed O&M, Variable O&M, Fired Hour and Start-Up.
  - CO<sub>2</sub> Emissions: PG&E is responsible for CO<sub>2</sub> emissions under Cap and Trade associated with scheduled operations up to guaranteed Heat Rate.
  - Credit: Collateral due at PPA execution, upon CPUC approval and during Delivery Term.

# Overview of Capacity-only Confirm

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## Based on EEI Master

In general, conforms with Standard RA Confirm except:

- CHP Capacity-only Product
- Must be a CHP on Effective Date and remain a CHP Facility for term of the Agreement
- Term - less than five years
- Contract Quantity (MW) delivered from a CHP facility

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# Appendix

# Other CHP Program Information

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See other references for CHP facilities at PG&E:

**Website:** <http://www.pge.com/b2b/energysupply/qualifyingfacilities/welcome/>  
or <http://www.pge.com/b2b/energysupply/qualifyingfacilities/>

**Email:** [QFSettlementInquiries@pge.com](mailto:QFSettlementInquiries@pge.com)



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**Break**

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# Q & A

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**END**