



# RENEWABLES PORTFOLIO STANDARD

## 2012 SOLICITATION BIDDERS' WEBINAR

December 20, 2012

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# Agenda

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## Topics

- Introduction
- 2012 Key Changes
- Solicitation Overview
- PPA Overview
- Offer Submittal Process
- Evaluation Methodology
- Supplier Diversity
- Keys to a Successful Bid
- Intermission
- Q & A

## Presenter

Sandy Burns

Sandy Burns

Sandy Burns

Sandy Burns

Marcus Keller

Sandy Burns, Todd Strauss

Jerilyn Gleaves

Sandy Burns

Team

# Q&A Questions Instructions

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- Questions will be answered at the end of the Webinar
- Participants should email questions to [RenewableRFO@pge.com](mailto:RenewableRFO@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/renewables2012](http://www.pge.com/rfo/renewables2012)
  - Any question that was not answered during the Webinar will be posted 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
- PG&E encourages Participants to review carefully RPS Solicitation Protocol and all RFO materials dated December 10, 2012

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# 2012 Key Changes

# Key Changes from 2011 RPS

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- **Interconnection Status**
  - Participants must have at least a Phase 1 Study from the CAISO, or equivalent; study must be submitted with the offer
- **PPA offers only**
  - Offer structures not accepted:
    - PPAs with buyout options
    - Turn-key ownership
    - Sites for development
- **Long term offers only**
  - Offers must have delivery term of at least 10 years. Short-term offers will not be considered.
  - PG&E has a preference for bundled offers beginning no earlier than 2019-2020
  - PG&E has a preference for REC-only offers with significantly higher quantities in 2013
- **Credit**
  - Project development security (“PDS”), due 30 days after CPUC approval of the PPA; increased from \$50/kW to \$300/kW
  - Letter of credit requirements updated to reflect modified bank credit rating requirements and limits on the amount provided by each bank

# Key Changes

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- **Transmission Costs**
  - PG&E has the right to terminate the PPA if the anticipated network upgrade costs exceed a pre-determined amount, unless Seller agrees to and is able to forego reimbursement for such excess costs
- **Net Market Value**
  - Standardized variables to be included pursuant to D. 12-11-016
- **Portfolio Adjusted Value**
  - Used in evaluation of offers pursuant to D. 12-11-016
- **Solicitation Streamlining**
  - Offer submittals need only be electronic, with the exception that a hard copy of the introductory letter is required
  - Reduction of project information requested at time of offer submission in the areas used for project viability and environmental risk

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# Solicitation Overview



# RFO Schedule

DATE	EVENT
December 20, 2012	Bidders' Webinar
January 29 - February 6, 2013 5:00 P.M., Pacific Prevailing Time ("PPT")	Window for PG&E to receive Offer(s). Offers will not be accepted after February 6 <sup>th</sup> , 5:00 P.M. PPT.
April 1, 2013	PG&E notifies Shortlisted bidders and requests bid deposit
April 15, 2013	Participant notifies PG&E whether it accepts Shortlist position from PG&E and posts offer deposit
April 17, 2013	PG&E submits final Shortlist to Commission and Procurement Review Group
May 17, 2013	PG&E submits report on evaluation criteria and selection process; Independent Evaluator submits preliminary reports
TBD	PG&E and Participants negotiate and execute Agreements subject to Regulatory Approval; PG&E submits Agreements for Regulatory Approval
April 17, 2014	PG&E 2012 RPS Solicitation Shortlist Expires

# 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 bids are treated consistently
  - Report on proposed transactions to CPUC when filed for CPUC approval
- The IE performs an independent review of all proposals
- The IE may review all proposal data and monitor all negotiations
- 2012 IE is Arroyo Seco Consulting (Lewis Hashimoto)

# Eligible RPS Offers

Portfolio Content	Overview of Requirements
Category 1 Product	<ul style="list-style-type: none"><li>• The generating facility must be interconnected with a California balancing authority or schedule to a California balancing authority</li><li>• Location :<ul style="list-style-type: none"><li>➢ CAISO control area</li><li>➢ If Outside CAISO, but within the California balancing authority (e.g. LADWP, IID), then Seller should specify how energy will be delivered to CAISO</li></ul></li></ul>
Category 2 Product	<ul style="list-style-type: none"><li>• Firmed and Shaped bundled product from out-of-state generating facilities<ul style="list-style-type: none"><li>➢ Offer price must include delivery to CAISO interface point; no busbar deliveries will be accepted</li></ul></li></ul>
Category 3 Product	<ul style="list-style-type: none"><li>• Unbundled RECs or</li><li>• Other delivery mechanisms not within Category 1 or Category 2</li></ul>

# Eligible RPS Offers

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- **Eligible resources**
  - All eligible renewable resources as determined by CEC. The CEC Guidebooks available at <http://www.energy.ca.gov/renewables/> explain the criteria for RPS eligibility of renewable energy resources
- **Minimum project capacity**
  - Projects offering As-Available or Baseload products must have a capacity greater than 1.5 MW
  - Projects offering Dispatchable products must be 25 MW or greater
- **Facility Status**
  - New and existing facilities are eligible
- **Interconnection Status**
  - Participants must have at least a Phase 1 Study from the CAISO or equivalent
  - Participants may submit offers as energy-only or with full capacity deliverability status
- **Delivery Term**
  - Minimum offer term of 10 years
- **Offer Structure**
  - PPA structure only

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# PPA Overview

# Form Contracts

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- **Two form contracts**
  - Attachment H1: Form of Power Purchase Agreement (“PPA”) for Category 1 and Category 2 Products
  - Attachment H2: Form of Renewable Energy Credit Purchase Agreement (“REC Agreement”) for Category 3 Products
- **Your comments are not required on the PPA or REC Agreement at time of your initial offer submission. However, PG&E strongly encourages you to become familiar with, and take into consideration, the terms and conditions of applicable agreement while you put together your offer. Your offer should not anticipate deviating from the terms of the contract unless the delivery structure or other elements of your Offer would require modification.**

# PPA – Key Commercial Terms and Changes for 2012

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- **Seller commits to Guaranteed Project Milestones**
  - Construction start date
  - Commercial operation date
  - There are provisions for excused delay relating to force majeure, transmission and permitting
  - Modified delay provision to allow Sellers to claim a delay after construction, not just before construction start. Retained six month limit.
  - Removed ITC/PTC delay provisions that allowed PG&E and sellers to elect to delay either of the guaranteed milestones or terminate the PPA in the event that ITCs or PTCs are not extended
- **Credit Requirements**
  - Increased Project Development Security from \$50/kW to \$300/kW. This is the amount posted by Seller prior to commercial operation
  - Letter of credit requirements modified to reduce the credit rating requirement for issuing banks and to limit PG&E's exposure to any bank.

# PPA – Key Commercial Terms and Changes for 2012

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- **Excess network upgrade cost termination right**
  - Pursuant to D. 12-11-016, added language that allows PG&E to terminate the PPA if the results of any interconnection study or agreement indicate that network upgrade costs will exceed the amount agreed upon (“transmission cost cap”) between Seller and PG&E in the PPA
  - In lieu of contract termination, seller may buy-down the excess transmission costs above the transmission cost cap, subject to FERC/CAISO approval of any modified interconnection agreement



# PPA – Key Commercial Terms and Changes for 2012

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- The delivery Point shall be the PNode designated by the CAISO for the Project
- Contract price must be in \$/MWh (all-in) for all products except for dispatchable (\$/kW-year for capacity, \$/MWh for energy)
  - Prices should be fixed
  - Indexed prices not accepted, though prices may be different from year to year
- Seller receives contract price as adjusted by TOD factors; New for 2012: Annual payments for baseload projects based on prices adjusted for TOD will be limited to 105% of the contract price. This limit can result in sellers reimbursing PG&E if the seller delivers excessive amounts of energy during super-peak period
- Minimum output requirements apply to all technologies except small hydro
- Certain non-modifiable terms (highlighted in form PPA)

# PPA – Key Commercial Terms

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- **PG&E is scheduling coordinator for projects in CAISO control area**
- **As-available resources**
  - Sellers provide weather and availability data and other information to PG&E
  - PG&E forecasts and schedules energy from the project
  - PG&E may assess “Forecasting Penalty” in order to offset PG&E’s imbalance costs during certain periods due to the seller’s failure to meet the data and other requirements under the PPA. Otherwise PG&E bears the imbalance energy cost risk.
- **Baseload resources**
  - Seller provides schedule
  - Seller is responsible for all costs, charges, and imbalances and CAISO penalties assessed by the CAISO

# PPA – Key Commercial Terms

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- **Curtailment**

- Seller must curtail energy deliveries in response to curtailment requests from the CAISO or PG&E. Review the PPA carefully to better understand under what circumstances Seller will or will not be reimbursed for curtailed energy deliveries.
- PG&E has the right to require the seller to curtail energy deliveries during the “Buyer Curtailment Period” for up to 250 hours per year and PG&E will pay for such curtailed energy at the contract price.
- Made clarifying changes to assure that any energy supply bid or self schedule for less than forecasted production for the same time period will count as a buyer bid curtailment.
- PG&E is strongly requesting that Seller specify the price for additional curtailment hours above the 250 hours. This can have a significant impact in the selection process.

- **Deliverability**

- PPA is drafted for projects that will have obtained full capacity deliverability status by commercial operation.
- Offers from projects that will be energy-only must modify the PPA as necessary.

# Time of Delivery (“TOD”) Factors for TOD Period

## TOD FACTORS: FULL CAPACITY DELIVERABILITY STATUS

### TOD PERIOD

Monthly Period	Super-Peak	Shoulder	Night
Jun – Sep	2.297	1.069	0.798
Oct – Dec, Jan & Feb	0.953	0.857	0.808
Mar – May	1.041	0.819	0.828

## TOD FACTORS: ENERGY ONLY

### TOD PERIOD

Monthly Period	Super-Peak	Shoulder	Night
Jun – Sep	1.157	1.011	0.951
Oct – Dec, Jan & Feb	1.071	1.018	0.963
Mar – May	0.907	0.937	0.987

The TOD Factors have been updated since the 2011 RPS RFO

# TOD Factors

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- **Payment**
  - Contract Price \* TOD Factor \* MWh
- **Super-Peak**
  - Noon – 8:00 PM, Monday – Friday, except NERC Holidays<sup>1</sup>
- **Shoulder**
  - 6:00 AM – Noon and 8:00 PM – 10:00 PM, Monday – Friday, except NERC Holidays; and 6:00 AM – 10:00 PM Saturday, Sunday and all NERC Holidays
- **Night**
  - 10:00 PM – 6:00 AM, all days

1. NERC Holidays are New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, and Christmas Day

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# Offer Submittal Process

# Offers Allowed Per Seller

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- An offer refers to a particular project at a particular site. An offer variation refers to changes in an offer for the same site.
- No limit on number of offers allowed per seller. Each offer may have up to four variations.
- **Contract Price offered in each offer must be independent**
  - The contract price offered for one project cannot be dependent on whether PG&E elects to execute a PPA with another project
- Offers may vary by:
  - Size
  - Delivery term
  - Commercial operation date
  - Price (e.g. fixed vs. escalating prices)
  - Delivery Profile
- Sellers should select their most competitive and viable projects for submission

# Offer Submittal

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- Offer package must contain all required information and must be organized as described in the Solicitation Protocol section VI. Submittal Process Overview, Required Information, and Submittal Deadline
  - Hard copy documents: two (2) copies of the introductory letter
  - Electronic documents: two (2) USB flash drives, each flash drive containing identical information
- Offers must be received by PG&E by Tuesday, January 29 – February 6, 2013 5:00 P. M. (PPT) via hand-delivery or mail delivery to:

**Renewables Portfolio Standard RFO**  
**Attn: Energy Procurement, Sandra Burns**  
**77 Beale Street, Mail Code B25J**  
**San Francisco, CA 94105**
- Information due on January 29, 2013
  - Attachment D1 or D2: Offer Form, as applicable
  - Attachment I: Term Sheet
  - Attachment J1 to J7: Project Information
  - Attachment L: Supplier Diversity Questionnaire



# Offer Submittal

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- **Information due on Monday, April 15, 2013 if Shortlisted**
  - Attachment B: Form of Letter of Credit
  - Attachment G: Confidentiality Agreement
  - Attachment M: Request for Taxpayer ID Number (W-9)
  - Attachment N: Additional Project Information

# Offer Form Overview

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- New format
- A few new data points requested
- Two different offer forms
  - Attachment D1: Category 1 product
  - Attachment D2: Category 2 and 3 products
  - We will be posting new versions of the offer forms after the Webinar. Please use these versions when submitting an offer.
- Instructions
  - Be sure to **enable macros** when opening the offer form
  - Instructions tab provides clear directions on completing the offer form
  - Please make sure you submit an excel form. No other formats will be accepted.
  - Each cell with a light yellow background **must** be filled out. Once completed the light yellow background will disappear.
  - Red triangular tab indicates that help captions are available when you position your mouse over the field
  - Grayed out cells are auto-calculated cells
  - If the word “Complete” does not appear at the top of the page, the form will be deemed invalid and returned to you

# Attachment D1: Offer Form Structure

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- Instructions
- Product Description
- Energy Pricing
- Gen Profile
- Dispatchable (if applicable)
- Project Viability Worksheet
- Validation

# Offer Form – Product Description



Complete

View Missing Inputs

## D1-1: Participant Proposal Project Description and Contact Information

General Offer Information			
Total Offers	1	Offer Source	RPS
Offer #	1	Year	2012
Variant	a (base)	Bid ID	ABCXYZ_ABCXYZ_PhotoVo_1a_of_1_RPS2012_1
		Has this project previously been offered to PG&E?	No
		Is this project currently under contract?	No

An offer is limited to four variants.

Project Information			
Full Legal Project Name	ABCXYZ Solar, LLC		
Project Location	Solar City		
Street Address	456 Solar Lane		
City	Solar City	State	CA
		Zip Code	12345
Facility Status	New	QF	Type of Site Control
			Option to Lease
Project Description	Provide a project description.		

Offer Information			
Product Type	As Available	Capacity (MW)	22.00
Capacity Type	Full Capacity Deliverability	Avg Pre-TOD Price (\$/MWh)	\$122.85
Full Deliverability Date	1/1/2021		
Guaranteed Construction Start Date	1/1/2019	Description	
Guaranteed Commercial Operation Date	6/1/2021		
Delivery Term (months)	120	10.00 years	

Delivery term must be at least 10 years.



# Offer Form – Product Description

## Additional Information on Existing QF Projects

QFID Number _____	Other information deemed sufficient for PG&E to identify the QF project
Date Existing PPA will Terminate _____	

If existing QF, fill in this section.

## Transmission & Generator Information

Interconnection App. Status	Phase I study or equivalent complete	Expected Interconnection Point	Los Banos
Interconnecting Utility	PG&E	Line Name / Number	Los Banzo
Other Utility		Closest Substation	Tracy
Interconnection Point Status	Does not exist & not fully permitted to construct	Transmission Cluster	Stagg
Interconnection Queue	CAISO - GIP		
Queue Number		Reliability Upgrade Costs (\$)	\$2,000,000
Interconnection Applied For?	Full Capacity Deliverability	Network Upgrade Construction Time	30 months
Interconnection Agreement Capacity	22 MW	Deliverability Upgrade Costs (\$)	\$3,000,000
Interconnection Voltage	230 kV	Total Upgrade Costs (\$)	\$5,000,000
Interconnection Level	Transmission		
Delivery Market Other	NP15	Other Characteristics	
Delivery Market Other			

Reliability upgrade costs are the costs for interconnection only.

Deliverability upgrade costs are the costs to achieve full capacity deliverability/resource adequacy.

# Offer Form – Product Description

Counterparty Information			
Counterparty/Legal Entity Name	ABCXYZ Solar, LLC		
Street Address	456 Solar Lane		
City	Solar City	State	CA Zip Code 12345
Country	U.S.A.		
Website	<a href="http://www.abcxyzsolar.com">www.abcxyzsolar.com</a>		

← This name should be the name of the legal entity that will appear on the PPA.

Location Information		
Latitude	45.00000000	degrees
Longitude	150.00000000	degrees
CREZ	Non-CREZ	<a href="#">Click here for CREZ map</a>
CREZ Location		

← Latitude and Longitude should be entered in decimal degrees.

Storage Technology (if applicable)			
Storage Included	No	Does Storage Increase Project Capacity?	<Choose>
Storage Method	<Choose One>	Storage Energy	MWh
Other Method		Round-trip Efficiency	%
Dispatch Authority	<Choose>	Energy Loss Rate	%/hr
Storage Capacity	MW	Description	
Pmax	MW		
Pmin	MW		
<b>Service Support</b>			
Frequency Regulation	<Choose>		

← New. If your project employs storage technology, complete this section.

# Offer Form – Product Description

## Acknowledgement of Protocol

By selecting 'Yes', participant hereby agrees to the terms of the Solicitation Protocol and TERMS OF THE PROTOCOL AGREEMENT, as provided in Attachment A. Yes

Electronic Signature Electronic Signature of duly authorized representative of Participant

Select 'Yes' to certify that the typed name acts as your electronic signature. Yes

## Participant Authorization

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

Electronic Signature Electronic Signature of duly authorized representative of Participant

Select 'Yes' to certify that the typed name acts as your electronic signature. Yes

## Project Owners

Name	Own %	Website URL
ABCXYZ Solar, LLC	100%	

100%

## Submission History

It was indicated above that this project has previously been offered to PG&E. Please identify the forum(s) in which the offer was previously made.

Forum	Project Name	Comments / Notes
<Choose One>		
<Choose One>		
<Choose One>		



Complete this section if project previously offered to PG&E.

# Offer Form – Energy Pricing

Select either fixed or escalating price type. Escalated pricing requires the first year's price and an annual escalation rate. Fixed pricing requires inputting values for each contract year.

Pricing Type Offered Escalation Rate Escalating  
1.50%

Contract Year Number	Contract Year Start Date (mm/dd/yyyy)	Contract Year Stop Date (mm/dd/yyyy)	Contract Capacity (MW)	Expected Annual Capacity Factor (%)	Contract Quantity: Expected Annual Net Energy (MWh)	Guaranteed Annual Energy Production as applicable (MWh)	Contract Price (\$/MWh)
1	06/01/21	05/31/22	22.00	30.04%	57,897	58,476	\$115.00
2	06/01/22	05/31/23	22.00	29.59%	57,028	57,598	\$116.73
3	06/01/23	05/31/24	22.00	29.21%	56,289	56,852	\$118.48
4	06/01/24	05/31/25	22.00	28.71%	55,330	55,883	\$120.25
5	06/01/25	05/31/26	22.00	28.28%	54,500	55,045	\$122.06
6	06/01/26	05/31/27	22.00	27.86%	53,683	54,219	\$123.89
7	06/01/27	05/31/28	22.00	27.49%	52,987	53,517	\$125.75
8	06/01/28	05/31/29	22.00	27.03%	52,084	52,605	\$127.63
9	06/01/29	05/31/30	22.00	26.62%	51,303	51,816	\$129.55
10	06/01/30	05/31/31	22.00	26.22%	50,533	51,039	\$131.49

## Curtailment Provisions (minimum of 250 annual curtailment hours must be offered)

Annual hours project may be curtailed 250 hours  
Minimum operating capacity 10.00 MW

Additional Curtailment Information

### Curtailment Pricing Options

	(a) \$/MWh (Pre-TOD)	(b) % of Contract Price
0 - 150 hrs	\$115.00	100.00%
151 - 250 hrs		150.00%
251 - 500 hrs		
501 - 750 hrs		
751 - 1000 hrs		
1001 - 1250 hrs		
1251 - 1500 hrs		
1501 - 1750 hrs		
1751 - 2000 hrs		
>2000 hrs		

New. Indicate the hours available to be curtailed and the associated pricing..



# Offer Form – Generation Profile

**IMPORTANT:**

1) Please provide a generation profile forecast of each month's average-day net output energy production, stated in MW by hour, by month and by year. Generation entered here should exclude onsite use and should be entered in calendar year format.

2) The template is designed and defaulted such that the first year generation profile, when entered, gets auto-populated through out with Annual Degradation given for the convenience of certain types of projects. However, this is not be enforced for all projects and Developers can freely over-write cells to give generation profile that is appropriate for their project.

3) Please run the "Expected Revenue" macro using the button in Cell AE3 after the generation profile has been completed. The 'Expected Revenue' is an estimation only and PG&E recommends that you utilize your own model when developing your offer.

**Expected Revenue**

Year 1 2021

Annual Degradation (%)	1.50%
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Month	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	Monthly Total	# Days
Jan	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.5	12.6	13.5	12.6	12.0	12.4	13.3	13.7	12.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,350	31
Feb	0.0	0.0	0.0	0.0	0.0	0.0	0.2	6.8	12.6	14.3	13.9	13.4	14.3	14.4	13.3	12.8	5.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,413	28
Mar	0.0	0.0	0.0	0.0	0.0	0.0	1.0	9.4	16.1	17.9	17.7	17.2	16.6	16.8	17.0	15.6	14.0	8.4	0.8	0.0	0.0	0.0	0.0	0.0	5,224	31
Apr	0.0	0.0	0.0	0.0	0.0	0.0	1.5	12.5	18.0	19.3	19.4	19.3	19.0	19.1	19.1	18.1	16.9	14.0	1.1	0.0	0.0	0.0	0.0	0.0	5,917	30
May	0.0	0.0	0.0	0.0	0.0	0.0	5.3	14.5	18.5	19.2	19.3	18.9	19.0	18.6	18.9	18.6	17.2	14.2	7.6	0.0	0.0	0.0	0.0	0.0	6,502	31
Jun	0.0	0.0	0.0	0.0	0.0	0.0	6.8	15.0	17.9	19.3	19.1	19.2	18.9	18.9	18.5	18.6	17.5	15.1	10.5	0.7	0.0	0.0	0.0	0.0	6,486	30
Jul	0.0	0.0	0.0	0.0	0.0	0.0	4.3	13.3	16.3	17.8	18.1	18.5	17.9	18.3	18.3	18.2	16.9	14.7	9.9	0.5	0.0	0.0	0.0	0.0	6,293	31
Aug	0.0	0.0	0.0	0.0	0.0	0.0	1.6	11.4	15.7	17.3	17.5	17.8	17.4	17.1	16.8	16.7	15.4	13.7	4.9	0.0	0.0	0.0	0.0	0.0	5,682	31
Sep	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.0	14.5	16.2	16.2	16.2	16.0	15.7	15.3	15.0	12.7	7.3	0.6	0.0	0.0	0.0	0.0	0.0	4,624	30
Oct	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	13.7	15.5	15.0	13.0	12.9	13.3	14.4	14.4	12.9	1.5	0.0	0.0	0.0	0.0	0.0	0.0	4,069	31
Nov	0.0	0.0	0.0	0.0	0.0	0.0	0.4	8.3	12.8	13.4	13.7	12.4	13.3	13.8	13.8	11.2	2.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	3,462	30
Dec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.8	12.4	13.0	12.2	12.1	12.7	13.6	13.1	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3,241	31
Total	0	0	0	0	0	0	655	3,477	5,509	5,986	5,922	5,780	5,796	5,874	5,849	5,522	4,048	2,719	1,089	37	0	0	0	0	58,263	

Once generation profile is entered, you can select 'Expected Revenues' to calculate the expected revenues. The calculator is for illustrative use only and is not intended to be used for making a decision in relation to your offer. PG&E encourages you to calculate your offer's expected revenues using your own tools.

Expected Revenue	Total MWh	Avg Capacity Factor	Avg Post TOD-Price	Contract Quantity(MWh)
76,826,637	541,635	28.09%	141.84	54,163
1,166,416				
1,114,016				
1,015,236				
813,780				
417,072				
353,818				
331,915				

# Offer Form – Dispatchable



## D1-4: Dispatchable Product Profile

Full Legal Project Name: ABCXYZ Solar, LLC

Expected Revenue

Contract Year No:	Contract Year Start Date	Contract Year Stop Date	Dispatched Capacity (kW)	Annual Capacity Price (\$/kW-yr)	Annual Capacity Payment (\$)	Contract Price for Dispatched Energy (\$/MWh)
1	06/01/21	05/31/22			\$0	
2	06/01/22	05/31/23			\$0	
3	06/01/23	05/31/24			\$0	
4	06/01/24	05/31/25			\$0	
5	06/01/25	05/31/26			\$0	
6	06/01/26	05/31/27			\$0	
7	06/01/27	05/31/28			\$0	
8	06/01/28	05/31/29			\$0	
9	06/01/29	05/31/30			\$0	
10	06/01/30	05/31/31			\$0	

	Definition: Hours Since Last Shutdown	Maximum # of Starts Available to	Cost to PG&E for each Start (\$)	Start up Ramp Rate (MW/min or hour)
1 Cold	-----	-----	-----	-----
2 Warm	-----	-----	-----	-----
3 Hot	-----	-----	-----	-----

If you choose Dispatchable as your Product Type, then the Dispatchable tab appears.

Please answer the following Dispatch information

- Will your plant be supplemented with natural gas or other fossil fuel?
- If so, what fuel and what percentage of the fuel will this be?  Percentage
- What percentage of your O&M will be fixed or variable?  Percentage
- What is your dispatch rate to maximum capacity (e.g. 10 minutes, 1 hour, 1 day)?  Minutes F/V  Hours  Days
- What is your ramp-down rate (MW per minute, hour)?
- What is your minimum up time (e.g. minutes, hours)?
- What is your minimum down time (e.g. minutes, hours)?
- What are your operating ranges net delivered MW (minimum and maximum)?  Minimum  Maximum
- What is your expected annual scheduled maintenance or Planned Outage rate?  Percentage
- What is your expected annual Forced Outage rate?  Percentage
- What is your expected run hours?  Hours/year
- Describe any seasonal variations in your net energy production.



# Offer Form – Project Viability Worksheet

---

- New and existing projects must complete the Project Viability Tab
- Three Sections
  - Company / Development Team
    - Project Development Experience
    - Ownership / O&M Experience
  - Technology
    - Technical Feasibility
    - Resource Quality
    - Manufacturing Supply Chain
  - Development Milestones
    - Site Control
    - Permitting Status
    - Project Financing Status
    - Interconnection Progress
    - Transmission System Upgrade Requirements
    - Reasonableness of COD

# Offer Form – Project Viability Worksheet

## Instructions

1	Please select a score for <b>each</b> of the 12 scoring criteria below (select from options in light yellow highlighted boxes)
2	Scores for each criterion can only be selected from the drop-down menu choices. No intermediate scores are permitted.
3	Notes supporting each score <b>must</b> be provided (light green highlighted boxes)
4	The location of more detailed information in the bid packet <b>must</b> be provided (tan highlighted boxes)

Project Development Experience	10	The company and/or the development team has completed 2 or more projects of similar technology and similar or larger capacity.
	7	The company and/or the development team has either (i) completed one project of similar technology and similar or larger capacity; (ii) begun construction of and completed financing for at least one project of similar technology and similar or larger capacity; or (iii) completed 2 or more projects of any technology and of similar capacity.
	4	The company and/or the development team has completed 2 or more projects of any technology but less capacity per project (wholesale generation).
	2	The company and/or the development team has either (i) completed at least one project of any technology and capacity (wholesale generation); or (ii) begun construction of and completed financing for at least one other similar project.
	0	None of the above.

All three parts of all eleven (11) scoring items must be filled out (total of 33 inputs). Once all parts are completed, you will see “Complete” after selecting “View Missing Inputs”. If the worksheet is incomplete, the submission is deemed invalid and the form will be returned to you.

# Offer Form – Project Viability Worksheet

<b>Project Development Experience</b>		<b>10</b>	The company and/or the development team has completed 2 or more projects of similar technology and similar or larger capacity.
		<b>7</b>	The company and/or the development team has either (i) completed one project of similar technology and similar or larger capacity; (ii) begun construction of and completed financing for at least one project of similar technology and similar or larger capacity; or (iii) completed 2 or more projects of any technology and of similar capacity.
		<b>4</b>	The company and/or the development team has completed 2 or more projects of any technology but less capacity per project (wholesale generation).
		<b>2</b>	The company and/or the development team has either (i) completed at least one project of any technology and capacity (wholesale generation); or (ii) begun construction of and completed financing for at least one other similar project.
		<b>0</b>	None of the above.



<b>Project Development Experience</b>	<b>7</b>
<i>Our management team members have developed three generation facilities totaling 90 MW. The names of the facilities are X (wind), Y (solar), and Z (solar).</i>	
See Attachment J-6 of offer for details	

← Select score from list of options provided.

← Provide supporting notes for the score.

← Note the location in the bid packet where more detailed information can be found.

# Offer Form – Validation



## Attachment D1 Validation Worksheet

Please make sure your form is complete before you submit it. If the form is not complete, please do not submit it as it will be returned to you through an automated process.

This form is complete.

Tab Name	Message
Product Description	Complete
Energy Pricing	Complete
Gen Profile	Complete
Project Viability Worksheet	Complete

You must submit an offer form with the “Complete” message or it will be returned to you.

# Attachment D2: Offer Form Structure

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- Instructions
- Product Description
- Pool Offer Information (if applicable)
- Pricing
- Delivery Profile
- Project Viability Worksheet

# Offer Form – Product Description



Complete

View Missing Inputs

D2-1: Participant Proposal Project Description and Contact Information

General Offer Information			
Total Offers	<u>1</u>	Offer Source	<u>RPS</u>
Offer #	<u>1</u>	Year	<u>2012</u>
Variant	<u>a (base)</u>	Bid ID	<u>ABCXYZ_ABCXYZ_Wind_1a_of_1_RPS2012_1</u>
		Has this project previously been offered to PG&E?	<u>No</u>
		Is this project currently under contract?	<u>No</u>

Offer Information			
Product Type	<u>REC Only</u>	Select Pricing Structure	
Unit Type	<u>Pooled Resources</u>	Capacity (MW)	<u>100.00</u>
Can subset be purchased?	<u>No</u>	Avg Pre-TOD Price (\$/MWh)	<u>\$8.68</u>
Guaranteed Construction Start Date	<u>1/1/2009</u>	Description	
Contract Start Date	<u>1/1/2013</u>		
Delivery Term (months)	<u>120</u> <b>10.00 years</b>		

Capacity is auto-calculated for pooled resources after the information on the "Pool Offer Information" tab is completed.





# Offer Form – Product Description

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**Itemize Project Information on the Pool Offer Information Tab**

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**Itemize Transmission & Generator Information on the Pool Offer Information Tab**

--

**Itemize Project Registration on the Pool Offer Information Tab**

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For pooled resources unit type, information for these sections will need to be completed on the 'Pool Offer Information' tab.

# Offer Form – Pool Offer Information

Full Legal Project Name	Project Nameplate Capacity (MW)	Eligible Renewable Resource (ERR)Technology	Facility Status	Commercial Operation Date	Address	City
ABCXYZ Wind, LLC	50	Wind	Existing	01/01/09	ABCXYZ Windy Lane	Windy City
ABCXYZ Geothermal, LLC	50	Geothermal	Existing	01/01/09	ABC XYZ Thermal Lane	Thermal City

State	Zip	Longitude	Latitude	Interconnecting Utility	Interconnection Point	Delivery Point (e.g. COB, Palo Verde,...etc)
OR	78912	70.00000000	-80.00000000	BPA	Windy	COB
OR	45678	100.00000000	-45.00000000	BPA	Thermal	COB

Are you in Transmission queue not with CAISO (Y/N)?	Transmission Queue Number	Vintage Availability (years)	CEC ERR Certification Number	WREGIS Generating Unit ID	Qualifying Facility (Y/N)	Additional Information
No		2013-2020	ABC123	ABCXYZ123	No	
No		2013-2020	XYZ123	ABCXYZ456	No	

# Offer Form – Pricing

Completion of each field will be dependent upon product type. Be sure to position your mouse over the fields for instructions.

Pricing Type Offered Fixed  
Escalation Rate \_\_\_\_\_

Contract Year No:	Contract Year Start Date (mm/dd/yyyy)
1	1/1/2013
2	1/1/2014
3	1/1/2015
4	1/1/2016
5	1/1/2017
6	1/1/2018
7	1/1/2019
8	1/1/2020
9	1/1/2021
10	1/1/2022

Contract Year Stop Date (mm/dd/yyyy)
12/31/13
12/31/14
12/31/15
12/31/16
12/31/17
12/31/18
12/31/19
12/31/20
12/31/21
12/31/22

Contract Capacity (MW)	Expected Annual Capacity Factor (%)	Contract Quantity: Expected Annual MWh	Contract Price (\$/MWh)
100.00	0.01%	95	\$9.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00
100.00	0.00%	5	\$8.00

For REC product type, you must input the data in MWh whereas for REC plus firm energy" product type, this field is auto-populated after "Calculate Annual MWh, Expected Revenue & Credit Requirement" button on the "Delivery Profile" tab is selected.

# Offer Form – Delivery Profile

Year 1      2013

Month	On-Peak	Off-Peak
Jan		
Feb		
Mar		
Apr		
May		
Jun		
Jul		
Aug		
Sep		
Oct		
Nov		
Dec		

0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
0  
855

**Calculate Expected Revenue & Credit Requirement**

For RECs, you do not need to complete this field. For REC + Firm Energy, you will need to input the MWh for your offer.

Expected Revenue	Total MWh	Avg Capacity Factor	Average Price, \$/MWh	Avg annual Contract Quantity (MWh)
1,215	140	0.00%	8.68	14

These fields will be calculated after you input the data and select the 'Calculate Expected Revenue & Credit Requirement' button.

# Attachment D2: Project Viability Worksheet

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- The worksheet in attachment D2 is the same as the worksheet in D1
- For REC offers, the worksheet does not need to be completed
- For REC plus firm energy offers, the worksheet must be completed for new and existing resources

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# Evaluation Methodology

# Evaluation Methodology

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- Evaluation will be based on quantitative and qualitative criteria
- Quantitative criteria
  - Net Market Value
  - Portfolio Adjusted Value
- Qualitative criteria
  - Project viability
  - RPS goals
  - Supplier diversity
- Portfolio Adjusted Value and project viability are the primary criteria

See Attachment K of the Solicitation Protocol for details of the evaluation criteria

# Market Valuation

$$\text{(Adjusted) Net Market Value} = E + C + S - (P + T + G + I)$$

- **E - G = Energy benefit – Congestion Cost**
  - Based on market prices and Locational Marginal Pricing (LMPs) multipliers applied to reflect congestion and losses
  - Includes energy value from Buyer Curtailments for avoiding (presumably negative) wholesale market price for the Offer's energy delivery
- **C = Capacity benefit** is based on
  - PG&E's internal estimate of avoided cost of capacity, and
  - Offer's contribution to meeting PG&E's future Resource Adequacy requirements
- **S = Ancillary Service benefit** based on Offer's Ancillary Service capability. Assumed to be zero for non-dispatchable offers.
- **P = Post TOD Adjusted PPA Price** based on Offer's contract price and TOD factors
- **T = Transmission Network Upgrade Cost** based on study results or interconnection agreement
- **I = Integration Cost** assumed to be zero, pursuant to D. 12-11-016



# Portfolio Adjusted Value (“PAV”)

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- **PG&E will evaluate PAV by adjusting NMV by the following components:**
  - Location
  - RPS Portfolio Need
  - Energy Firmness
  - Contract Term Length (Tenor)
  - Curtailment
- **PAV is intended to represent the value of an Offer in the context of PG&E’s portfolio by making explicit and systematic adjustments for PG&E’s preferences on each component**

# PAV Adjustments – Location

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- PG&E has a preference for resources located in NP15
- PAV adjusts the value of energy and capacity for offers from resources in SP15
  - Energy Benefit
    - Is the minimum of the SP15 energy forward price and NP15 energy forward price
  - Capacity Benefit
    - Calculated using a short-run avoided cost of capacity rather than a long-run avoided cost of capacity, even for the delivery years when resources in NP15 are evaluated using a long-run avoided cost of capacity

# PAV Adjustments – RPS Portfolio Need

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- PG&E has a preference for offers with deliveries beginning no earlier than 2019-2020
- PAV considers how an offer contributes to PG&E's overall portfolio need for RPS energy
  - For each delivery year in which PG&E's portfolio is projected to be short RPS-eligible energy, energy benefit will be increased using PG&E's forward curve for RECs for the offer's RPS-eligible energy
  - For each delivery year in which PG&E's portfolio is projected to be long RPS-eligible energy, no additional value will be attributed to the offer's RPS-eligible energy

# PAV Adjustments – Energy Firmness

- PG&E has a preference for offers delivering firm energy
- PAV adjusts energy values as a product of:
  - The PAV risk-adjusted multiplier of the offer
    - Multiplier values are between 0.8 and 1.0
    - A multiplier is a function of the relative firmness of the offer's energy and is not simply a function of the renewable technology being offered
    - Typically, the multiplier for an offer of wind or solar PV will be inferior to the multiplier for an offer of solar thermal without storage which will be inferior to the multiplier for an offer of solar thermal with storage
  - An offer's energy value
    - i.e., Energy Benefit – Congestion Cost of NMV, adjusted by locational and RPS Portfolio Need adjustments in PAV

# PAV Adjustments – Contract Term Length

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- PG&E has a preference for offers with contract term length (tenor) of 10 to 15 years rather than greater than 15 years
- PAV adjusts the value of an offer for the contract term length using an adder
  - The adder is between  $-\$10/\text{MWh}$  to  $\$10/\text{MWh}$
  - Provided that an offer has a contract term length of at least 10 years, the shorter the contract term length, the higher the value of the adder

# PAV Adjustments – Curtailment Hours Offered

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- PG&E has a preference for offers with more buyer curtailment (number of hours) and also at a lower contractual price if curtailed
- PAV adjustment for buyer curtailment
  - For the incremental value to PG&E's portfolio (**above and beyond what is captured in the market value of buyer curtailments**) such as
    - Reducing portfolio's cost for CAISO imbalance charges
    - Avoiding CAISO's involuntary curtailment orders to PG&E
    - Avoiding extreme volatility in spot market prices
    - Similar benefits associated with managing portfolio

# Project Viability

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- All offers will be evaluated and scored using current version of the CPUC Project Viability Calculator (PVC)
- Company/Development Team
  - Project development 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 system upgrade requirements
  - Reasonableness of Commercial Operation Date

# RPS Goals

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- **RPS Goals will take into account State goals:**
  - Environmental and economic benefits to communities afflicted with poverty or high unemployment, or that suffer from high emissions levels of toxic air contaminants, air pollutants, and greenhouse gases.
  - Impact on water quality and consistency with the CPUC’s recommended water conservation practices
  - Governor’s executive order S-06-06 on biomass
- **Supplier diversity**



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# Supplier Diversity

# Supplier Diversity RFO Objectives

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- Provide an overview of PG&E's supplier diversity goals and objectives
- Help bidders understand what a good supplier diversity plan looks like
- Help bidders understand the definition of a viable diverse business partner
- Promote participation of women-, minority- and service disabled veteran-owned suppliers

# PG&E's Commitment to Supplier Diversity

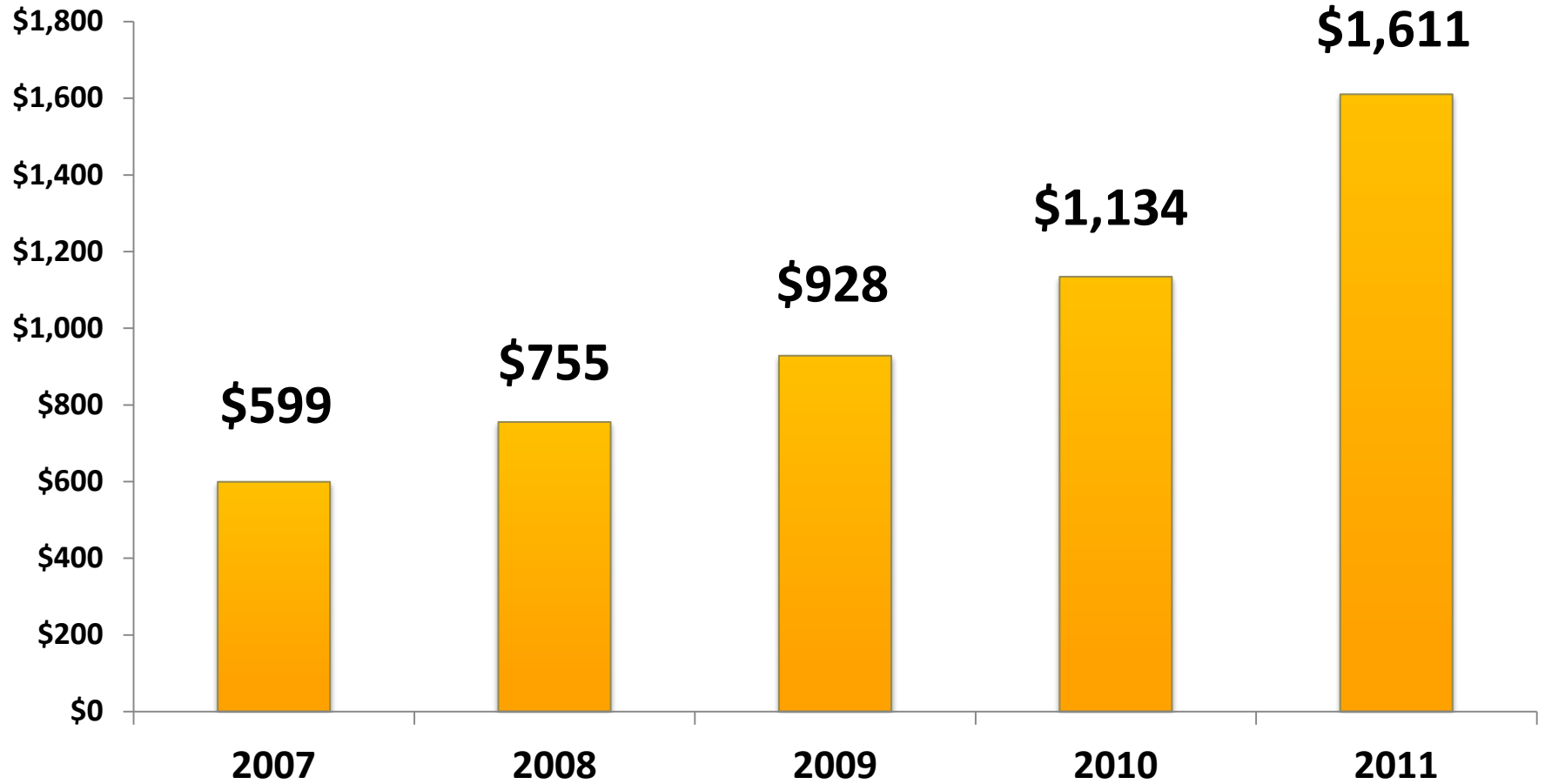
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President, Pacific  
Gas & Electric  
Company

**“Our ongoing commitment to diversity and inclusion is essential to our success as a business. Being more reflective of the communities we serve will better enable us to anticipate and respond to our customers’ needs. It will allow us to engage in more creative and innovative solutions to the challenges we face. Using our purchasing power to support women-, minority- and service-disabled veteran-owned businesses will enhance the diversity of businesses in California. And these actions will enrich the communities where our customers and employees live and work.”**

# 5-Year Diverse Performance Trend (\$M)



# Supplier Diversity Considerations

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- Bidders are asked to complete a Supplier Diversity questionnaire with their offer submittal
- Bidders are asked to provide information about whether they are a diverse supplier or their plans to include diverse suppliers during project development and operation
- During the evaluation process, we will evaluate whether the Bidder is a certified diverse supplier and the viability of each supplier diversity solution on a case-by-case basis.
- Supplier Diversity solutions include:
  - Value Added Reseller
  - Joint Ventures
  - Partnerships
  - Mentorship/Supplier Development

# 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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- Understand that PG&E is committed to supplier diversity – incorporating diverse supplier solutions is preferred
- Increasing business with diverse firms is a business imperative – supplier diversity is inherent in our values and critical to our success
- Utilize the tools and resources available to help increase your diverse supply – leave no stone unturned
- We are interested in innovative solutions to achieving supplier diversity goals and objectives – Creativity is welcomed
- We are here to assist you – We will supply you with the Prime Supplier Participation Program Guide and a list of potential diverse firms for your consideration

# 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>



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# Keys to a Successful Bid

# Keys to a Successful Bid

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- **Be competitive**
  - Last year PG&E received over 1000 eligible offers
- **Submit a complete package**
- **Provide offer variations for bundled product to allow PG&E to select best fit for PG&E portfolio**
  - **Size**: PG&E has a procurement target of 1,000 GWh per year, which is equivalent to about 500 MW of intermittent resources. For project and counterparty diversification, PG&E may prefer smaller project offerings (100 MW or less) at slightly higher prices over very large projects
  - **RPS Need**: PG&E's RPS energy need is not prior to 2019-2020 or later. Offering an earlier start date will lower the PAV of your offer unless you reduce the offer price considerably; Your offer can include construction of the project with sales to another party prior to a PPA with PG&E
  - **Delivery Term**: Offer as few years as you possibly can. Each additional year in an offer is a competitive disadvantage, unless it enables you to reduce your offer price considerably

# Keys to a Successful Bid

- **RA Value:** Products that provide RA will have more value if located in PG&E service territory
  - A fully deliverable option will be preferred over an energy-only option offered at the same price only if the PAV Capacity Benefit is greater than the cost of deliverability network upgrades. Dispatchable projects located in NP15/ZP26 are much more likely to meet this condition than non-dispatchable projects located in SP15.
  - Configuration of a solar PV facility (fixed tilt vs. tracking) is likely of little benefit for projects located in SP15. Delivery profile will continue to impact TOD-adjusted contract revenue.
- **RECS:** Your offer must be a 10-year (or longer), bankable product
  - You may offer different quantities of RECs in each year, at different prices
  - Higher quantities of RECs in 2013 will be strongly preferred, with minimal quantities in 2014 and beyond
    - Because the greatest value to PG&E of these RECs is for future banking, price is the key
    - PG&E desires to retain flexibility to use RECs in the future given statutory caps; This flexibility is retained by purchasing RECs in the first compliance period.
    - PG&E also has a better sense of how much eligible REC volume exists during the first compliance period

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# Intermission

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# Q & A