PG&E’s Bidders’ Webinar

Distribution Resources Plan (DRP)
Demonstration Project C RFO

August 22, 2017
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<tr>
<td>• Q &amp; A</td>
<td></td>
</tr>
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</table>
Webinar Format

- PG&E will not take questions during the webinar

- Participants should email questions to DRPRFO@pge.com during the presentation
  - Questions will be answered at the end of the webinar
  - PG&E might not address all questions during the Q&A portion of this webinar
  - After the webinar, PG&E will compile and post a Q&A document on PG&E’s DRP RFO website, accessed via www.pge.com/rfo/DRP2017

- PG&E may post a list of attendees on PG&E’s website
  - If you do not want your name or the name of your company published, please send an email to DRPRFO@pge.com by August 24, 2017

- PG&E plans to post a recording of the webinar on PG&E’s DRP RFO website
Webinar Overview

- This presentation is intended to provide a summary of the information and requirements set forth in the RFO materials.

- Participants should carefully review the DRP Solicitation Protocol and all RFO materials, available on PG&E’s DRP RFO website.

- To the extent that there are any inconsistencies between information provided in this presentation and the requirements in the RFO materials, the RFO materials published on PG&E’s website shall govern.
Communications and Website

- RFO website (www.pge.com/rfo/DRP2017) provides everything you need to submit an Offer, including (but not limited to) the following:
  - RFO materials
  - Detailed instructions for submitting Offers(s) using Power Advocate and to the IE
  - Announcements, additional resources, and Q&A
- All solicitation communications should be directed to: DRPRFO@pge.com with a copy to the Independent Evaluator at Alan.Taylor@sedwayconsulting.com
### DRP Demo C RFO Schedule

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 14, 2017</td>
<td>PG&amp;E issues DRP Demonstration Project D RFO</td>
</tr>
<tr>
<td>August 22, 2017</td>
<td>Participants’ webinar</td>
</tr>
<tr>
<td>September 29, 2017 by 1:00 PM PPT</td>
<td>Deadline for Participants to submit Offers via Power Advocate</td>
</tr>
<tr>
<td>October 2, 2017</td>
<td>Deadline for IE to receive a flash-drive of Offers</td>
</tr>
<tr>
<td>November 30, 2017</td>
<td>Participants Notified of Eligibility for Shortlisted Offer Negotiations</td>
</tr>
<tr>
<td>December 4, 2017</td>
<td>Participants notify PG&amp;E whether they accept Shortlist status</td>
</tr>
<tr>
<td>April 2018</td>
<td>Target Advice Letter filing with the CPUC</td>
</tr>
<tr>
<td>June 2018</td>
<td>CPUC approves contract (Decision date + 12 months)</td>
</tr>
<tr>
<td>February 2019</td>
<td>Resources online (Decision date + 20 months)</td>
</tr>
<tr>
<td>April, 2020</td>
<td>Forecasted Demo C Need</td>
</tr>
</tbody>
</table>
• D.17-06-012 adopts two conflicting milestones:
  – Resource online date 2019
  – Wires need, and corresponding distribution deferral benefit, beginning 2020

• 2019 online date may be challenging
  – PG&E anticipates CPUC approval by mid 2018, at the earliest
  – Sellers need time to construct resources or acquire customers

• PG&E is allowing Sellers to offer 2019 and 2020 start dates

• If 2020 online dates prove significantly more cost effective than 2019 online dates
  and/or more viable, PG&E may request the CPUC waive the 2019 online date
  requirement. There is no guarantee that the CPUC will allow 2020 start dates at this
  time.
Independent Evaluator (IE)

• Primary role of the IE is to:
  – Monitor RFO processes to ensure fair and equal treatment of all Participants
  – 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 filed for CPUC approval

• The IE may review all Offer data and communications with Participants

• 2017 DRP RFO IE is Sedway Consulting. Contact is:
  Alan Taylor (Alan.Taylor@sedwayconsulting.com)
Goals of DRP
Goals of DRP

Modernize distribution system to accommodate expected DER growth through two-way power flow

Enable customer choice of new electric DER technologies and services

Identify and develop opportunities for DERs to realize grid benefits
Distributed Energy Resources (DER) means:

- Distributed Renewable Generation
- Energy Storage
- Energy Efficiency
- Demand Response
- Electric Vehicles
Demo C Overview

- CPUC has directed IOUs to procure distribution services from third party owned DERs in order to demonstrate DER capabilities in deferring traditional “wires” investments for two demonstration projects beginning in 2020: “Demo C” and “Demo D”

- PG&E has selected El Nido Substation (in Merced County) as location for Demo C
  - Targeting deferral of El Nido Transformer Bank No. 1 replacement project

- Learning objectives include:
  - Validation of DER distribution service capabilities
  - Sourcing of a localized DER portfolio via competitive solicitation
  - Administration and operation of a localized DER program by the utility
  - Validation of locational net benefits as estimated by indicative Locational Net Benefits Analysis (LNBA) model in DRP Demonstration Project B
El Nido Substation Location Overview

- Location: El Nido Substation Bank 1, Merced County
- 836 electric service points
- Summer Peaking Area
- Electrical Service: 12 kV voltage distributed to customers via 2 distribution feeders
- Customer base:
  - Agricultural (539 service points)
    - Dairies, Ranches, Poultry, Groundwater Pumping
  - Residential (227 service points)
  - Commercial and Industrial (77 service points)
Customer Composition Served by El Nido Substation – Bank 1

<table>
<thead>
<tr>
<th>Customer Sector</th>
<th>Total Svc. Points*</th>
<th>Peak Day Demand (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>227</td>
<td>0.70</td>
</tr>
<tr>
<td>Commercial</td>
<td>69</td>
<td>3.00</td>
</tr>
<tr>
<td>Industrial</td>
<td>8</td>
<td>3.00</td>
</tr>
<tr>
<td>Agricultural</td>
<td>539</td>
<td>12.28</td>
</tr>
</tbody>
</table>

* Service point count as of June 1, 2017
Historical Peak Load:
Day Shape by Customer Type

Peak Load: 18.99 MW
Time of Peak: 6 PM
Historical Shoulder* Month Load: Day Shape by Customer Type

Peak Load: 10.99 MW
Time of Peak: 7 PM

* Typical load day within the April, May, and September months; shoulder months of the “Summer” Planning cycle
### Solar and DR Customers Served by El Nido Substation Bank 1

#### PV Interconnections*

<table>
<thead>
<tr>
<th># of Customer PV Installations</th>
<th>Total PV Capacity (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>1.7</td>
</tr>
</tbody>
</table>

* Customer interconnection values based on total number of customers interconnected as of June 1, 2017

#### Demand Response

<table>
<thead>
<tr>
<th># of Customers Participating in Programs</th>
<th>Reduction to Peak Demand (MW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>Negligible</td>
</tr>
</tbody>
</table>
Distribution Capacity Need:
El Nido Bank No. 1 Loading Forecasts for 2024 – Shoulder Months

- Peak load approaches or exceeds bank limit by < 1 MW ~4 hr/day April, May, September
- Load driven primarily by Ag pumping – sensitive to precipitation much more than temperature
Distribution Capacity Need:
El Nido Bank No. 1 Loading Forecasts for 2024 – Summer Months

- Peak load **exceeds** bank limit by 2 – 4 MW nearly 24 hr/day June – August
## Distribution Capacity Services Procurement Summary – Shoulder Months

### Month  Apr, May, Sept

<table>
<thead>
<tr>
<th>Capacity type</th>
<th>Peaking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnitude</td>
<td>1 MW</td>
</tr>
<tr>
<td>Duration</td>
<td>5 – 9pm</td>
</tr>
<tr>
<td>Frequency</td>
<td>50 calls/year (Apr – Sept); max 7 calls/mo; max 2 consecutive days</td>
</tr>
<tr>
<td>Allowable load increase</td>
<td>1 MW, 12am – 3pm</td>
</tr>
</tbody>
</table>

### Graphical Representation

- **Allowable load increase**
- **“Peaking” capacity**
Distribution Capacity Services Procurement Summary – Summer Months

<table>
<thead>
<tr>
<th>Month</th>
<th>June</th>
<th>July, August</th>
<th>Jun – Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity type</td>
<td><em>Baseload</em></td>
<td><em>Baseload</em></td>
<td><em>Peaking</em></td>
</tr>
<tr>
<td>Magnitude</td>
<td>2 MW</td>
<td>4 MW</td>
<td>1 MW</td>
</tr>
<tr>
<td>Duration</td>
<td>24 hr</td>
<td>24 hr</td>
<td>5 – 9pm</td>
</tr>
<tr>
<td>Frequency</td>
<td>30 days</td>
<td>31 days/mo</td>
<td>50 calls/year (Apr – Sept); max 15 calls/mo; max 7 consecutive days</td>
</tr>
<tr>
<td>Allowable load increase</td>
<td>1 MW 1 – 6am (Jun), 12am – 3pm (Jul, Aug)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Solicitation Overview
RFO Design (1/4)

- **Product**
  - PG&E is purchasing distribution capacity services only
  - No RA, energy, ancillary services, RECs, other attributes
  - Sellers may offer delivery terms beginning 2019 or 2020 and extending through 2024 or 2029

- **Project size**
  - Minimum size of 0.5 MW
  - Maximum size of 4 MW for baseload and 1 MW for peak capacity
  - Offers must be in increments of 0.5 MW
  - Peak offers must be the same size for all the delivery months, delivery hours, and for the length of the delivery term
  - Baseload offer must be no more than 2 MW in June and 4 MW in July and August

- **Offers**
  - There are no limits on the number of offers
  - Offers may be mutually exclusive/inclusive of each other
  - *If possible, Sellers are encouraged to provide an offer that meets the full baseload and/or peak need*
**Project eligibility**
- DERs: Renewable distributed generation, energy storage, energy efficiency, demand response, electric vehicles
- Participants may be either in-front-of-the-meter or behind-the-meter
- Participants may offer one technology or a portfolio
  - If offering a portfolio, Participants must identify the composition of the portfolio
- Participants may offer one resource or an aggregation

**Measurement and verification**
- Participants must submit a measurement and verification plan with their offers
- Projects that utilize existing Measurement and Verification protocols adopted by CAISO or CPUC are preferred
- Behind the meter Projects using a baseline methodology may require a customized approach
• Interconnection
  – Project must connect to specified lines/feeders
  – No specific interconnection milestone required, but Participants must demonstrate they can meet the online date
  – Participants can utilize the Integration Capacity Analysis (ICA) map on PG&E’s DRP RFO website to get an indicative understanding of current capacity on the distribution lines in the Chowchilla area

• Double payments/double counting
  – Projects must be fully or partially incremental to PG&E’s programs, tariffs, and solicitations
    ▪ Examples and links to PG&E’s programs are provided on the PG&E DRP RFO website
  –Participants must submit Appendix B5 of the RFO materials to demonstrate how their Offer is incremental
  – Submit any questions on incrementality to DRPRFO@pge.com
Examples of fully incremental, partially incremental, and non-incremental Projects

<table>
<thead>
<tr>
<th>Resources can be:</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully Incremental</td>
<td>Add-ons to existing DERs; New programs; EE Technology not included in Portfolio</td>
</tr>
<tr>
<td>Partially Incremental</td>
<td>Enhanced uptake of DER over base</td>
</tr>
<tr>
<td>Not Incremental</td>
<td>Existing rooftop PV compensated under NEM; Existing DG or ES compensated under SGIP; Existing EE or DR portfolio resources without enhancement</td>
</tr>
</tbody>
</table>
Customer Engagement Support
Customer Engagement Support

- PG&E is offering support to Participants with behind-the-meter Projects to improve the chances of success in acquiring customers.

- For all Participants, PG&E will provide a customer facing website to enable customers in the area to validate that this is a PG&E solicitation.

- PG&E is also offering additional resources to support customer acquisition: Offers should reflect Participant’s value of such support.
  - Participants must include in their Offers the number of hours of PG&E Customer Relationship Manager support it wants.
  - Final scoping of support is subject to negotiation.

**Example of services for 50 hours**
- Assist in evaluating and executing co-branding opportunities
- Customer engagement support for Participants’ identified targets

**Example of services for 200 hours**
- Same as 50 hours plus:
  - Assist with development of outreach plans
  - Assist in identifying high potential customers
Term Sheet Overview
Transaction

- **Products:** Distribution baseload and distribution peak capacity in accordance with Operating Parameters
  - Decrease load or increase generation during specified hours
  - Sellers are free to monetize other revenue streams
  - Seller is free to operate the resource how it wants outside of the Restricted Periods

- **Seller commits to provide Product at Contract Capacity**
  - Seller may sell excess amount of Product from Project to third parties
  - Seller may sell other attributes of the Project to third parties
Transaction

• Distribution baseload capacity
  – Sellers must dispatch every hour of every day during June, July and August

• Distribution peak capacity
  – 5 to 9 pm, April-September
  – PG&E may dispatch up to 50 times per calendar year
    ▪ April, May, September: up to 7 times per month, up to 2 consecutive days
    ▪ June, July, August: Up to 15 times per month, up to 7 consecutive days
  – Sellers will be instructed on whether they are required to provide distribution peak capacity by 8 am day-ahead

• Seller will provide PG&E with real-time visibility into DER performance
  – Sellers are required to install a communications system and equipment for PG&E to be able to remotely monitor Project status on an aggregate and individual unit basis

• Restricted Periods
  – For resources that require charging or load shifting, project may only increase load during the following periods
    ▪ June: 1 am to 6 am
    ▪ April, May, July, August, and September: 12 am (midnight) to 3 pm
Compensation

- Compensation:
  - Fixed price ($/kw-month)
  - For distribution peak capacity, also includes a variable price ($/kwh) for amount of Distribution Services Project provides when required
- If Contract Capacity is not delivered, fixed payment will be reduced

<table>
<thead>
<tr>
<th>Ratio</th>
<th>Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥1.00</td>
<td>100%</td>
</tr>
<tr>
<td>≥0.90 and &lt; 1.00</td>
<td>Ratio</td>
</tr>
<tr>
<td>≥0.80 and &lt; 0.90</td>
<td>Ratio x 50%</td>
</tr>
<tr>
<td>≥0.75 and &lt; 0.80</td>
<td>0</td>
</tr>
<tr>
<td>&lt; 0.75</td>
<td>Ratio – 75% (Seller will pay PG&amp;E)</td>
</tr>
</tbody>
</table>
Project Site and Customers

• Sellers are solely responsible for acquiring Customers

• Sellers may remove or replace Sites/Customers, provided that changes are in accordance with safety provisions

• Seller must provide PG&E a list of Customers and satisfy incrementality criteria prior to Initial Delivery Date
  – Changes to initial Customer list must continue to satisfy incrementality criteria

• Seller’s marketing materials that reference PG&E are subject to written approval by PG&E

• Seller is responsible for all marketing activities, provided that PG&E may provide specified type of assistance and number of hours of customer representative time
Performance Assurance

• “Project Development Security” is due to PG&E within five (5) business days following CPUC approval of the agreement and must be in the form of a letter of credit or cash and in the following amounts:
  – $60 per kW for all new resources
  – $25 per kW for existing resources

• “Delivery Term Security” is due to PG&E before the Initial Delivery Date and will be held by PG&E throughout the delivery term
  – Maximum of $125/kw or 10% of the sum of the highest 36 months of fixed payments

Damage Payment/Termination Payment

• In an event of default, defaulting party will owe non-defaulting party an amount equal to the performance assurance
Conditions Precedent

• If CPUC Approval has not occurred on or before 180 days from the date on which PG&E files the agreement with the CPUC, then either party may terminate the agreement.

• Initial Delivery Date shall not occur until Seller:
  – Has constructed the Project and provided certification from an independent engineer that Project is commercially operable and constructed in accordance with the safety requirements.
  – Has passed an initial Performance Test demonstrating that the Project is capable of delivering Distribution Services.
  – Has provided PG&E with a list of Sites and Customers and PG&E has verified that such Sites/Customers are incremental.
  – Has provided Delivery Term Security.
Events of Default

- Failure to meet a Critical Milestone
- Failure to meet Initial Delivery Date
- Monthly Distribution Services Factor for any calendar year is less than 75%
- Results of Performance Test shows that the Project provides less than 85% of Contract Capacity
- Seller does not operate in accordance with the Restricted Periods for more than 3 days per year
Evaluation Methodology
Evaluation Criteria: Least Cost, Best Fit

- **Quantitative Factors**
  - Distribution deferral value
  - Contract payments
  - Customer engagement/support costs
  - Administrative costs

- **Qualitative Factors**
  - Project viability (including technology, interconnection, site control assessment, developer experience and customer acquisition plan)
  - Credit
  - Technology, counterparty diversity
  - Small business enterprise
Offer Submittal Process
Offer Submittal

• Offers must be submitted via the online platform at Power Advocate. Only accepted registrants are permitted to submit Offers.
  – Register through Power Advocate at: 
  – PG&E strongly encourages you to register well in advance of Offer due date of September 29th at 1:00 PM (PPT).

• Offer materials must also be submitted to the IE on a USB flash drive, no later than October 2nd at the following address:
  Sedway Consulting, Inc.
  821 15th Street
  Boulder, CO 80302

• PG&E will only consider Offers that, as of the submittal deadline, are complete and conforming Offers.
Keys to a Successful Proposal

• Sellers may choose to submit multiple Offers. Variations include:
  – Delivery Term
    – Start year 2019 or 2020
    – End year 2024 or 2029
  – Peak and/or baseload
  – With or without customer engagement support
  – Pricing
Required Offer Submission Forms

- Offer package must be in the format as specified in the 2017 DRP RFO Protocol.
- Introductory Letter. Format: MS Word
- Fully Completed Offer Form (Appendix A); Format: MS Excel
- Supplemental RFO Appendix Document (Appendices B1 through B7). Format: MS Word (submit one combined document)
- Interconnection Studies, if applicable; Format: PDF or MS Word

Note: Incomplete documentation will require additional communication to resolve any issues
Offer Form
Offer Form Structure

- Instructions
- Validation Worksheet
- Participant Information
- Project Description
- Pricing Sheet
- Supply Chain Responsibility
Offer Form – Instructions

• Be sure to **ENABLE MACROS** when opening the Offer Form.

• Instruction tab provides clear directions on completing the offer form.

• Please make sure you save and submit the form in Microsoft Excel “.xslb” format. **No other formats will be accepted.**

• Each cell with a yellow background must be filled out. Once completed the yellow background will disappear.

• 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.
Offer Form – Participant Information

- Complete legal entity name
- At least one authorized contact
- Read through each attestation and affirmation on the Participant Information tab. A number of these items are specific to and/or new to this RFO.
Offer Form – Product Description

General Offer Information

When you submit this form you must name it with the Bid ID that is automatically formulated in the field immediately below. The Bid ID is assembled as/when you populate these fields:

- Developer Name (Participant Information tab)
- Project Name (this tab)
- Term (Years) (this tab)
- PG&E Customer Engagement (Pricing tab)
- Offered Time Slot (this tab)

After you have populated the fields above be sure to save the final version of the offer form using the Bid ID immediately below as the file name.

Bid ID: JohnDoeDev_Battery1.SMCF.DRPO1.2017

Copy Bid ID

Offer Variant Exclusions

If PG&E accepts this offer variant it cannot also accept offer variant(s) I submitted with the following Bid ID(s), and vice versa.

<Choose>

PG&E cannot accept this offer variant in combination with any other offer variant I am submitting.

PG&E can accept this offer variant in combination with the offer variant(s) I am also submitted with the following Bid ID(s).

IF PG&E accepts this offer variant it cannot also accept offer variant(s) I submitted with the following Bid ID(s), and vice versa.

- Name file to match bid ID
- Offer Variant Exclusions
Offer Form – Product Description

1. Select Term

<table>
<thead>
<tr>
<th>Services To Be Performed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2020 - 2029</strong></td>
</tr>
<tr>
<td>Delivery Term</td>
</tr>
<tr>
<td>Delivery Hours (April - September)</td>
</tr>
<tr>
<td>Reduction in Net Loading Sought by PG&amp;E Per Month (MW) - not editable</td>
</tr>
</tbody>
</table>

2. Select Contract Capacity

<table>
<thead>
<tr>
<th>Contract Capacity (MW) - ALL MONTHS, APRIL THROUGH SEPTEMBER [only increments of 0.5 MW permitted]</th>
</tr>
</thead>
<tbody>
<tr>
<td>April - Sept.</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

3. Select Technology and enter capacity

<table>
<thead>
<tr>
<th>Technology</th>
<th>April - Sept.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technology 1</td>
<td><strong>Behind the Meter - Energy Storage</strong></td>
</tr>
<tr>
<td>Technology 2</td>
<td>&lt;Choose&gt;</td>
</tr>
<tr>
<td>Technology 3</td>
<td>&lt;Choose&gt;</td>
</tr>
<tr>
<td>Technology 4</td>
<td>&lt;Choose&gt;</td>
</tr>
<tr>
<td>Technology 5</td>
<td>&lt;Choose&gt;</td>
</tr>
</tbody>
</table>
Offer Form – Product Description

1. Select Term

- Delivery Term: 2020 - 2029
- Offered Time Slot: JUNE through AUGUST

2. Select Contract Capacity

- Reduction In Net Loading Sought by PG&E Per Month (MW): 2.0
- Contract Capacity (MW): 2.0, 4.0, 4.0

3. Select Technology and enter capacity

- Technology 1: Behind the Meter - Renewable Distributed Generation
- Technology 2: <Choose>
- Technology 3: <Choose>
- Technology 4: <Choose>
- Technology 5: <Choose>

- Capacity: 2, 4, 4
Offer Form – Pricing

*Customer Engagement Support for Behind the Meter Projects only

- Enter Fixed Capacity Price in $/kW-Month
- Enter Variable Price in $/kWh
Intermission