

# **PG&E's Participants' Webinar**

## **2019 System Reliability RFO Distributed Generation Enabled Microgrid Services Phase**

**December 13, 2019**

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## Q&A / Audio Replay

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- At any time during this presentation participants should e-mail their questions to the Solicitation mailbox: [SystemReliabilityRFO@pge.com](mailto:SystemReliabilityRFO@pge.com)
- There will be time to answer questions at the end of the webinar
  - PG&E may not address all of the questions during the Q&A portion of the webinar
  - After the webinar, PG&E will compile and post a Q&A document on PG&E's website at: <http://www.pge.com/rfo/systemreliabilityrfo>
- The audio portion of the webinar will also be posted on PG&E's website as noted above.

## Document Conflicts

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- This presentation is intended to be a summary level discussion of the information and requirements established in the Solicitation materials (it does not include all of the detailed information in the Solicitation materials).
- To the extent that there are any inconsistencies between the information provided in this presentation and the requirements in the Solicitation materials, the **Solicitation materials shall govern.**
- PG&E encourages participants to carefully review:
  - 2019 System Reliability RFO – DGEMS Protocol
  - Appendix F – Substation Information
- **PG&E urges Participants to ask clarifying questions regarding the Agreement prior to submittal of a bid under this Solicitation.**

## Objective and Agenda

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- The purpose of this webinar is to provide information to Participants who may submit offers into PG&E's 2019 System Reliability RFO – Distributed Generation Enabled Microgrid Services (“DGEMS”) Phase.
- **Topics**
  - Objective & Agenda
  - Independent Evaluator
  - CPUC D.19-11-016 Overview
  - Solicitation Overview
  - DGEMS Technical Criteria
  - DGEMS Project Types
  - Notice of Intent
  - Offer Submittal
  - Power Advocate
  - Intermission
  - Q & A

# Independent Evaluator (IE)

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- Primary role of the IE is to:
  - Monitor solicitation 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 solicitation process and proposed transactions to CPUC when filed for CPUC approval
- The IE may review all proposal data and communications with Participants
- 2019 System Reliability RFO – DGEMS phase IE is Merrimack Energy.
  - Wayne Oliver ([MerrimackIE@merrimackenergy.com](mailto:MerrimackIE@merrimackenergy.com))

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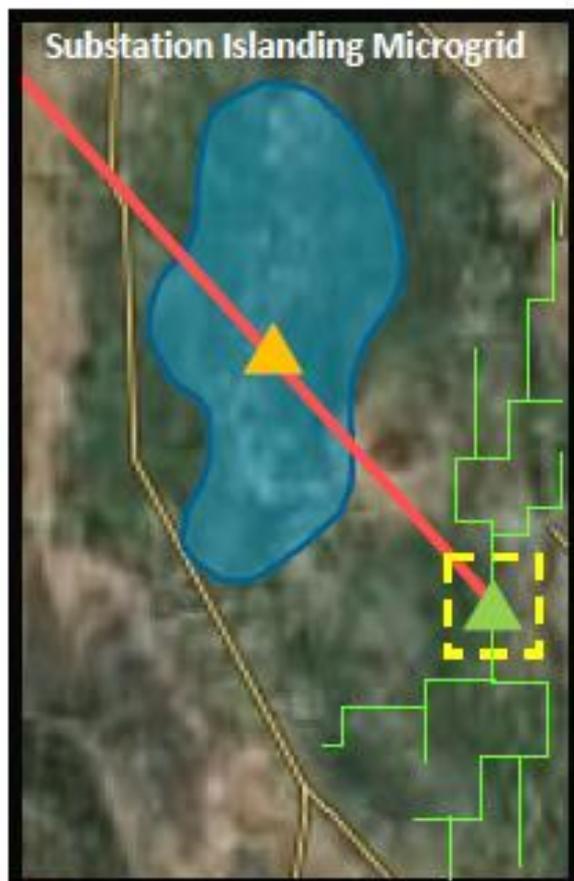
# CPUC D.19-11-016 Overview

## Overview of CPUC D.19-11-016

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- Requires incremental procurement of system-level qualifying resource adequacy (RA) capacity of 3,300 MW by all LSEs serving load in the CAISO balancing area
- PG&E's responsibility is to procure a minimum<sup>1</sup> of:
  - 358.45 of MW to come online by August 1, 2021
  - 537.675 of MW to come online by August 1, 2022
  - 716.9 MW to come online by August 1, 2023
- The Decision notes, “LSEs are encouraged to conduct procurement with an eye toward grid resiliency, the need for which has been recently demonstrated with the experience with wildfires and power shutoffs.”

## DG-Enabled Microgrids – 2020 Plan



Impact: Potential to energize 1,000s to 10,000s of customers per islanded substation

Plan: PG&E issuance of all-source RFO for RA procurement (IRP decision) to acquire generation resources that can meet requirements for PSPS resiliency

### Key Operations Requirements:

- 24 hour / multiple consecutive day operations
- load following / black start / cold load pickup
- located within “safe to energize” areas

Methodology: Identify highest priority substations from 2019 events:

- frequency of de-energizations
- total customer count impact



High fire weather footprint



Substation within wind and PSPS footprint



De-energized transmission line



Substation indirectly impacted by t-line de-energization



Safe to energize area distribution lines

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# Solicitation Overview

## Overview of Solicitation

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- PG&E is seeking to procure energy resources of all technologies that can provide Distributed Generation Enabled Microgrid Services (“DGEMS”) in targeted locations to serve load during future Public Safety Power Shutoff (“PSPS”) events.
  - In addition to microgrid services, the resources must provide broader reliability to the larger system when not responding to local PSPS events.
- Procurement in the Solicitation will qualify towards the minimum procurement requirement of 716.9 MW.
- PG&E has targeted twenty (20) substations in which it will accept Offers
- PG&E seeks Offers from projects that can be rapidly deployed
  - Preference for June 1, 2020 online date
  - Will also consider Offers for projects that are able to come online June 1 – September 1, 2020

## Substation Locations

Substation	Peak Load (MW)	Potential Land/Site Identified	Outside Substation Fence
SAN RAFAEL	69.9	Y	8,600
BRUNSWICK	60.3	Y	14,430
ALTO	31.8	Y	28,000
MOLINO	33.8	N	
HIGHWAY	50.0	Y	54,400
LAS GALLINAS A	33.4	N	
IGNACIO	30.5	Y	684,000
GREENBRAE	23.5	Y	
CALISTOGA	15.2	Y	84,000
FORT BRAGG A	13.8	Y	15,000
JESSUP	20.8	Y	45,000
WILLITS	15.2	Y	
CARQUINEZ	11.9	Y	22,800
HIGHLANDS	24.7	Y	30,000
WINDSOR	22.3	Y	20,000
MIDDLETOWN	15.5	Y	
MIRABEL	12.6	N	
UKIAH	17.5	Y	31,571
SALT SPRINGS	4.9	N	
KONOCTI	14.5	Y	

**NOTE:** This is a high-level (preliminary) review of the land at each of the listed Substations. Further review of topography, land rights, environmental and permitting issues will likely be necessary to determine actual useable space.

# Solicitation Schedule

Date/Time	Event
December 13, 2019	Participants' Webinar
December 2019 – January 2020	Supplemental Solicitation Information Provided
<b>December 17, 2019</b>	<b>Deadline for PG&amp;E to receive Notice of Intent by 3:00 PM (PPT)</b>
<b>January 15, 2020</b>	<b>Offers Due. Participants must submit Bid(s) to the online platform at Power Advocate by 1 PM (PPT)</b>
January 24, 2020	PG&E notifies Participants of status of submitted Offers
February 14, 2020	Agreement execution, which shall be subject to “CPUC and Bankruptcy Court Approvals,” as provided in the Agreement.
February 21, 2020	PG&E submits Agreements for CPUC and Bankruptcy Court Approvals.

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# DGEMS Technical Criteria

## DGEMS Technical Criteria

Projects must be able to provide reliable and safe power to the localized islanded grid or “Microgrid” during PSPS events. This includes the ability to:

1. Meet the full Microgrid load with no transmission energy supply for four to five consecutive days (96 to 120 hours) without any customer load drop.
  - a. While in Microgrid operations, the Project’s generation must be able to follow load to meet customer demand while maintaining appropriate power quality (defined below), and be able to meet peak and minimum customer demand throughout Microgrid operation.
2. The Project must maintain voltage and frequency consistent with grid power including:
  - a. Maintain steady state generator terminal voltage within 1% of setpoint using automatic voltage regulation (AVR)
  - b. Ability to set generator terminal voltage within specified range on a 480V base
  - c. Maintain nominal frequency at 60Hz
  - d. Protective relaying scheme that protects the system from abnormal voltage and frequency conditions
  - e. Ability to raise/lower generator terminal voltage during running conditions as grid conditions require

## DGEMS Technical Criteria (Continued)

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3. The Project must provide black start capability and must be able re-energize previously de-energized distribution feeders with no additional energy sources (distribution or transmission sources) and must be capable of handling high in-rush current with no external sources to assist.
4. The Project must be able to provide Cold Load Pick-up with the capability of adding dead load segments of distribution grid and maintain electrical properties, while in island operation.
5. The Project must be sited and interconnected to the substation in a fashion that allows for safe power delivery to the substation that is not subject to de-energization due to Public Safety Power Shutoff. Projects must also adhere to fire protection clearance standards.
6. Metering and SCADA equipment for real-time monitoring of breakers, disconnect switches, MW, MVAR, voltage and current at the interconnection.
7. Fully participate in the CAISO market when not providing Microgrid services, including the provision of RA.

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## DGEMS Project Types

## Third-Party Ownership DGEMS Projects

PG&E is soliciting Offers for DGEMS and Market Products provided by Projects owned and operated by Third Parties.

<b>Product</b>	<ul style="list-style-type: none"> <li>• PG&amp;E will contract for all Products delivered by the Project, specifically:             <ul style="list-style-type: none"> <li>○ Distributed Generation Enabled Microgrid Services (DGEMS)</li> <li>○ Standard market Products, including Energy, Capacity Attributes, and Green Attributes (to the extent available)</li> </ul> </li> </ul>
<b>Project Size</b>	<ul style="list-style-type: none"> <li>• Project shall be sized to meet full Microgrid load</li> </ul>
<b>Site Eligibility</b>	<ul style="list-style-type: none"> <li>• Project shall be sited on land designated by PG&amp;E             <ul style="list-style-type: none"> <li>○ Third-Party Ownership Projects may only be sited <u>outside</u> PG&amp;E substations</li> </ul> </li> </ul>
<b>Term &amp; Start Date</b>	<ul style="list-style-type: none"> <li>• 10 year term</li> <li>• Preferred online date of June 1, 2020 but no later than September 1, 2020             <ul style="list-style-type: none"> <li>○ Preferred RA initial delivery date on or before August 1, 2021 but no later than August 1, 2023</li> </ul> </li> </ul>
<b>Schedule &amp; Operations</b>	<ul style="list-style-type: none"> <li>• PG&amp;E will be Scheduling Coordinator and supply natural gas fuel if needed based on technology type</li> <li>• Seller will be responsible for operating project</li> </ul>

# Engineering Procurement Construction DGEMS Projects

PG&E is soliciting Offers for EPC Services for Projects to be owned by PG&E.

<b>Product</b>	<ul style="list-style-type: none"><li>• Seller will build Project on behalf of PG&amp;E as owner. Project must be designed to provide:<ul style="list-style-type: none"><li>○ Distributed Generation Enabled Microgrid Services (DGEMS)</li><li>○ Standard market Products, including Energy, Capacity Attributes, and Green Attributes (to the extent available)</li></ul></li></ul>
<b>Project Size</b>	<ul style="list-style-type: none"><li>• Project shall be sized to meet full Microgrid load</li></ul>
<b>Site Eligibility</b>	<ul style="list-style-type: none"><li>• Project shall be sited on land owned by PG&amp;E<ul style="list-style-type: none"><li>○ EPC Projects may be sited inside or outside PG&amp;E substations</li></ul></li></ul>
<b>Start Date</b>	<ul style="list-style-type: none"><li>• Preferred online date of June 1, 2020 but no later than September 1, 2020</li></ul>
<b>Schedule &amp; Operations</b>	<ul style="list-style-type: none"><li>• PG&amp;E will operate Project<ul style="list-style-type: none"><li>○ Seller may offer a Long Term Performance and Maintenance Agreement for Project</li></ul></li></ul>

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# Notice of Intent

# Notice of Intent Instructions



System Reliability RFO - DGEMS Phase Notice of Intent Form

0% Complete  
0 of 18 input requirements satisfied

Title:	
Email:	
Phone:	
Street:	
City:	
State:	
Zip:	

Fill out contact information

Project Information	
Do you intend to provide an offer(s)?	
Project Ownership Type	
What technologies (resource types) will you employ?	
Will your technology require gas fuel?	
Expected Substations/Sites:	At least one Substation/Site must be selected immediately below
SAN RAFAEL	
BRUNSWICK	
ALTO	
MOLINO	
HIGHWAY	
LAS GALLINAS A	
IGNACIO	
GREENBRAE	

Indicate Intent, Ownership Type, Technology Type

Indicate Substations interested in submitting offers. More than one can be selected.

Will the resource be able to meet the following requirements (See Section III.A of Solicitation Protocol for additional information)	
Can the resource provide 24 hour load support for four to five days?	
Is the resource capable of load-following?	
Can the resource maintain voltage and frequency consistent with grid power?	
Is the resource black-start capable?	
Is the resource capable of cold load pick-up?	

Indicate if resource can meet DGEMS requirements

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## Offer Submittal

# Offer Submittal

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- Participants must have submitted an Notice of Intent to receive the Agreement
- Documents due at Offer Submittal
  - Offer Form (will be released at future date)
  - Appendix B – Supplemental Project Information
    - Fill in applicable sections only
  - FERC Order 717 Waiver (if applicable)
  - Form Agreement edits (will be released at future date)
- Participants may submit up to five (5) Offer variations per substation
  - May vary any attributes of the offer provided as long as total variations for a single substation do not exceed five
- **Due to the time-sensitive nature of this RFO, PG&E will not be able to engage with Sellers that submit incomplete Offers or inaccurate Offer information.**

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## Power Advocate

# Power Advocate

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- Power Advocate will be used to submit the Notice of Intent and Offers. Participants must submit a Notice of Intent to gain access to the Power Advocate site to submit an Offer.
  - There are separate Power Advocate sites to submit the Notice of Intent and Offers.
  - Notice of Intent submittals can register through Power Advocate at: <https://www.poweradvocate.com/pR.do?okey=99884&pubEvent=true>
  - Power Advocate instructions and all Solicitation documents are available on PG&E's Solicitation website, and must be completed and included with each Power Advocate Offer submission.
- By submitting an Offer into this Solicitation, each Participant is required to abide by the confidentiality obligations specified in Section XI of the Solicitation Protocol and their Confidentiality Agreement.

## Communications and Website

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- PG&E's website at <http://www.pge.com/rfo/systemreliabilityrfo> provides everything you need to submit an offer, including (but not limited to) the following:
  - Solicitation Documents for the Solicitation
  - Solicitation Schedule
  - Substation Information
  - Notice of Intent
  - Agreements (coming soon)
- All solicitation communications should be directed to:  
[SystemReliabilityRFO@pge.com](mailto:SystemReliabilityRFO@pge.com) with a copy to the Independent Evaluator at  
[MerrimackIE@merrimackenergy.com](mailto:MerrimackIE@merrimackenergy.com)

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# Intermission

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## Q & A