



*Pacific Gas and  
Electric Company®*

# Energy Storage Request for Offers Solicitation Protocol

**2014**  
**Energy Storage Request for Offers**

**December 1, 2014**

(Updated ~~December~~ January 27, 2015)

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## I. Introduction and Overview

### I.A. Overview

Pacific Gas and Electric Company (“PG&E”) is issuing this Energy Storage (“ES”) Request For Offers (“RFO” or “Solicitation”) to achieve its megawatt (“MW”) procurement targets as required by California Public Utilities Commission (“CPUC”) Decision (“D.”) 13-10-040<sup>1</sup> (the “Storage Decision”), pursuant to Assembly Bill 2514 (Pub. Util. Code §2836 *et seq.*)<sup>2</sup>.

The Storage Decision establishes biennial ES procurement targets for CPUC jurisdictional load serving entities (“LSEs”), from 2014 through 2020, with installations required no later than the end of 2024. PG&E’s 2014 procurement targets for the transmission- and distribution-connected ES resources are summarized in Table I.1:

**Table I.1: PG&E’s Energy Storage RFO Procurement Targets and Suggested Use Cases**

Storage Grid Domains (Grid Interconnection Point)	2014 PG&E Target	Regulatory Function	Suggested Use-Cases	3 <sup>rd</sup> Party Ownership	PG&E Ownership
Transmission-Connected	50 MW	Generation / Market	Generation + ES	Y	N
			Stand-Alone ES Ancillary Services, Peaker, Load Following	Y	Y
Distribution-Connected	24 MW	Distribution Reliability	Substation ES (Deferral)	N	Y
		Generation / Market	Stand-Alone ES Generation + ES	Y	Y

The 10 MW customer-connected ES target is largely met through 9 MW of existing ES projects; the rest of this target is expected to be met through programs outside of this RFO. However, PG&E will consider customer-connected ES projects which may be evaluated along with transmission- and distribution-connected projects in this RFO. Participants offering customer-connected ES projects should submit Offers similar to transmission- and distribution-connected projects with proposed modifications to reflect the nature of the customer-connected ES project.

This Solicitation Protocol sets forth the terms and conditions by which PG&E will seek offers (“Offers”) to meet its 2014 cycle procurement target. An entity submitting an Offer in response to this RFO, hereinafter a “Participant,” agrees to be bound by all the terms, conditions and other provisions of this RFO and any changes or supplements to it that may be issued by PG&E. The obligations of the Participant are further described in Section V.A, Agreement by Participant.

<sup>1</sup> Decision Adopting Energy Storage Procurement Framework and Design Program, D.13-10-040, <http://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M079/K533/79533378.PDF>.

<sup>2</sup> [http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab\\_2501-2550/ab\\_2514\\_bill\\_20100929\\_chaptered.pdf](http://www.leginfo.ca.gov/pub/09-10/bill/asm/ab_2501-2550/ab_2514_bill_20100929_chaptered.pdf)

## **I.B. Energy Storage RFO Website and Communication**

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PG&E has established a website at [www.pge.com/rfo/energystorage](http://www.pge.com/rfo/energystorage), where Participants may access and download all RFO documents, information, announcements and Q&As that are posted.

To ensure the accuracy and consistency of information provided to all Participants, PG&E prefers that Participants communicate by e-mail to both [EnergyStorage@pge.com](mailto:EnergyStorage@pge.com), and to the Independent Evaluator ("IE"), [wayneoliver@aol.com](mailto:wayneoliver@aol.com). With respect to a matter of general interest raised by any Participant, PG&E may, without reference to the inquiring Participant, post the question and PG&E's response on PG&E's website. PG&E will attempt to respond to all inquiries, but may decline to respond to any particular inquiry.

All correspondence will be monitored by the IE, Wayne Oliver of Merrimack Energy Group, Inc., who was selected to oversee this Solicitation. The IE is an independent, third party evaluator who is required by the CPUC to monitor and evaluate certain competitive solicitations.

## **I.C. Schedule Overview**

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The expected schedule for the RFO is listed below. All deadlines occur at 5:00 P.M. Pacific Prevailing Time ("PPT"), unless otherwise noted. This schedule is subject to change by PG&E at any time for any reason.

**Table I.2: PG&E Energy Storage Solicitation Schedule**

Ongoing:	Participants are invited to register online to receive notices regarding the RFO at <a href="http://www.pge.com/rfo">www.pge.com/rfo</a>
December 1, 2014	PG&E issues RFO, including a non-binding Notice of Intent ("NOI") form
December 16, 2014	Deadline to register for Participants' Conference
December 18, 2014 2:00 – 4:00 PM	Participants' Conference (PG&E General Office, Auditorium) <sup>3</sup> . Registration required to attend in person and space is limited. Webcast available.
January 5, 2015	Deadline for NOIs
January 15, 2015	Participants' Offer Form Webinar
February 17, 2015	Deadline for PG&E to receive Offers by 1:00 P.M. PPT

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<sup>3</sup> Located at 245 Market Street in San Francisco, California. Enter through the atrium on Beale Street, between Market and Mission Street.

April 24, 2015	PG&E notifies selected Participants that their Offer(s) will be included on a list of Offers for which PG&E may seek to enter into or negotiate an Agreement related to that Offer (“Shortlist”)
May 1, 2015 or earlier	Participants notify PG&E whether they accept Shortlist status and execute and return the Confidentiality Agreement
May 8, 2015 or earlier	Deadline to submit Shortlist deposit, and any other requested documents
October 1, 2015 or earlier	Complete negotiations and execute agreements
No later than December 1, 2015	PG&E submits Agreements for CPUC Approval

The schedule and documents associated with the RFO are subject to change at PG&E’s sole discretion at any time and for any reason. PG&E will endeavor to notify Participants of any changes, but shall not be liable for any costs or liability incurred by Participants or any other party due to a change or for failing to provide notice or acceptable notice of any change.

PG&E reserves the right to execute agreements resulting from this RFO (each an “Agreement”) with individual Participants at any time after selecting the Shortlist. Most of PG&E’s obligations under an Agreement will be conditioned upon PG&E’s receipt of CPUC Approval, which will be defined in each Agreement. As described further in Section XIII, CPUC Approval, and in the executed Agreement, PG&E will seek CPUC Approval of all executed Agreements and reserves the right to seek CPUC Approval of individual Agreements prior to the execution of others in order to expedite the approval process. The CPUC’s approval process may take eighteen (18) months or longer from the date PG&E submits an Agreement for CPUC Approval.<sup>4</sup> Participants should factor the CPUC’s approval process into their project development timelines and proposals.

**I.D. Events in the RFO Schedule**

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- 1) Online Registration: Participants may register at the RFO website <http://www.pge.com/rfo> to receive timely announcements and updates about this RFO and other RFO-related information via email. Online registration is not required, but is strongly recommended.

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<sup>4</sup> Rule 12.1(c) of the Commission’s Rules of Practice and Procedure.

- 2) PG&E issues the Solicitation: At this time all documents associated with the solicitation, including documents which Participants are required to provide with their Offer, are posted to PG&E's public website under "2014 Energy Storage RFO."
- 3) Participants' Conference: PG&E will hold a Participants' Conference on December 18, 2014. The attendance registration form is provided on the RFO website. In order to facilitate the expected large number of RFO Conference Participants, PG&E requires registration and companies are limited to two in-person attendees. Attendance will be granted on a first-come, first-served basis. PG&E will provide a webcast, details of which will be made available online. Participants must submit the Participants' Conference Registration Form no later than December 16, 2014 at 5:00 P.M. PPT.
- 4) Participants' Offer Form Webinar: PG&E will hold a Participants' Offer Form Webinar on January 15, 2015. During this Webinar, PG&E will walk Participants through the RFO Offer Form. Call-in information will be provided on the ES Solicitation website.
- 5) Offers Due: Offers must be received by PG&E by 1:00 P.M. PPT on February 17, 2015. Participant Offer package(s) must be submitted through the online platform, Power Advocate. Offer package(s) must include the documents described in Section VI.D, Required Information.

As necessary, PG&E may request a meeting or conference call to discuss a Participant's Offer. The purpose would be to provide PG&E with clarity and a full understanding of the details of an Offer for the evaluation process. The IE may participate in these discussions.

- 6) PG&E Selects Shortlist: PG&E expects to notify Participants selected for PG&E's Shortlist by April 24, 2015. Participants accepting a Shortlist position must post a Shortlist Offer Deposit as described in Section V.D, Shortlist Offer Deposit. PG&E reserves the right to request additional information and to add additional Participants to the Shortlist following the initial selection.
- 7) PG&E and Participants Execute Agreements: PG&E expects to negotiate with Participants on the Shortlist and may select any subset of Shortlisted Offers for execution of an Agreement.
- 8) PG&E Submits Agreements for CPUC Approval: PG&E will seek CPUC Approval of each Agreement, as further described in Section XIII, CPUC Approval.

## II. RFO Goals

### II.A. PG&E Resource Needs

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PG&E's 2014 ES Procurement Target is 74 MW of eligible<sup>5</sup> energy storage resources connected to PG&E's transmission or distribution systems. However PG&E may elect to procure a different amount through this 2014 ES RFO.

PG&E is seeking Offers to purchase on a turnkey basis, or enter into Agreements with, energy storage resources ("Projects") that meet the specifications noted in Section III, Eligibility Requirements. PG&E will consider Offers for the following types of Projects:

- New or existing<sup>6</sup> stand-alone<sup>7</sup> energy storage resources;
- Energy storage resources that are associated with existing generation (conventional or renewable) currently under contract to PG&E.

For Projects participating in the wholesale market, these Projects must be capable of providing energy, capacity, or ancillary services for use in the CAISO, and if applicable, renewable and environmental attributes, resource adequacy, or other benefits in each case as further defined in the relevant Agreement ("Product").

### II.B. Agreement Types

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The following section describes certain of the Pro Forma Agreements or anticipated agreements for each of the Projects or Products being solicited in this RFO.

#### 1. Energy Storage Agreement (ESA)

Through an ESA, PG&E desires to purchase ES services and Products from a safe, reliable and operationally flexible Project. PG&E will not consider Offers from partial Units (i.e., based on the partial capacity of a Project). Specific operating flexibility must be defined by the Participant. All Offers for stand-alone ES owned by a third party or for ES added to an existing renewable resource would also be through an ESA. For Offers with an existing renewable resource, PG&E will not alter the contract terms or contract price under the existing agreement. The ESA will require additional modifications for distribution-connected Offers. For details, see Appendix F1a, Energy Storage Agreement.

#### 2. Amendment to Existing Conventional Generation Power Purchase Agreements to Include Energy Storage Resources

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<sup>5</sup> As defined by the CPUC.

<sup>6</sup> Per the Storage Decision, existing resources must have been installed after January 1, 2010.

<sup>7</sup> Stand-alone refers to projects that have a unique CAISO resource ID and are operated independently.

Participants seeking to add ES to an existing conventional generation facility currently under a long-term agreement with PG&E may need to, at a minimum, amend the existing agreement and include an additional price to reflect the addition of the storage resource and the additional benefits and requirements attributable to the storage resource. PG&E will not alter the delivery term or delivery period under the existing agreement. Participants should provide with their Offer package a detailed term sheet or redline of their existing agreement indicating Participant's proposed modifications to the existing agreement. For non-RPS amendments, see the term sheet, Appendix F1b.

### **3. Resource Adequacy Capacity Confirmation (RA Capacity Confirm)**

PG&E will consider Offers for RA-only products, provided the capacity comes from an eligible<sup>8</sup> ES resource<sup>9</sup>. A Participant must have in place an EEI Master Agreement with PG&E by the time of execution, and the form of Agreement would be a Confirmation under the EEI Master Agreement (see Appendices F3a – F3c).

### **4. Purchase and Sale Agreement (PSA) for Utility Ownership**

PG&E will consider Offers for Projects to be sold to PG&E on a turnkey basis using a PSA tailored to one of the three scenarios described below:

(1) *ES for distribution deferral*. This Project would enable PG&E to defer otherwise planned distribution investments at one of the five substations identified in Section III.F, PG&E-owned Distribution Deferral Asset, below;

(2) *ES at PG&E owned photovoltaic (PV) generation sites*. This Project would be constructed on one of three identified PG&E-owned PV Sites and must be capable of being connected to the PV system at the switchgear location. This Project would not result in increased generation from the PV site. See Section III.G, PG&E-owned Energy Storage at PV Sites, for more information on the specific sites and their ES requirements.

(3) *Stand-alone projects*. This Project would be a stand-alone Project anywhere in PG&E's service territory that would act as a CAISO wholesale market resource. This Project, as offered through a PSA, must also be offered as an ESA.

Under the PSA, Participants must develop, finance, and cause the Project to be constructed, completed, tested and ready for placement into commercial operation. This includes obtaining all real property interests, permits, and other authorizations and approvals required to construct and operate the Project. PG&E would take ownership of the Project once it has been constructed to the specifications in the PSA, is operational and has satisfied certain tests.

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<sup>8</sup> Eligible as defined by [Public Utility Code 2835\(a\)](#).

<sup>9</sup> PG&E will accept Offers for partial units for RA Capacity Confirms only.

Offers for PSAs must include milestone guarantees and performance guarantees for the completed facility.

Table II.3 below highlights certain terms for the above Agreement types. In the event of a conflict between the terms listed in Table II.3 below and the Agreements, the Agreements shall govern.

**Table II.3: Terms by Agreement Type**

<b>Contract Type</b>	<b>Online Date</b>	<b>Minimum Offer Size</b>	<b>Minimum Duration</b>
<b>Energy Storage Agreement (ESA)</b>	By December 31, 2022	10 MW – Transmission 1 MW – Distribution	15 minutes
<b>Amendment to Existing PPA</b>	Same as ESA	Same as ESA	Same as ESA
<b>Resource Adequacy Confirmation</b>	Same as ESA	Same as ESA	As currently defined by the CPUC <sup>10</sup>
<b>PSA (Distribution Deferral Sites)</b>	2017 or 2018, as applicable (See Table III.1)	1 – 4 MW, depending on project site (see Table III.1)	2 – 4 hours, depending on project site (see Table III.1)
<b>PSA (PG&amp;E’s PV Generation Sites)</b>	Later of May 1, 2017 or 1 year after CPUC Approval	4 MW	4 Hours
<b>PSA (Stand-Alone Storage)</b>	December 31, 2022 or earlier	Same as Offer under ESA	Same as Offer under ESA

### III. Eligibility Requirements

PG&E will consider Offers for Projects that meet the applicable specifications noted below, in addition to the Project requirements set forth in Section II.B, Agreement Types. Except for Offers for the PG&E-Owned PV Sites, site control is not initially required but Participants must at least identify a site and be on a path to obtaining site control, which Participant can demonstrate, at the time that Offers are submitted.

#### III.A. Project Size

*Projects Interconnected to the Distribution System.* An ES resource must have “Design Dmax”<sup>11</sup> of at least 1 MW. For utility-owned distribution deferral assets, see the requirements in Section III.F, PG&E-owned Distribution Deferral Assets. For utility-

<sup>10</sup> CPUC currently defines the Project’s Qualifying Capacity for RA as its ability to generate power over a continuous four hour period, for three consecutive days, or as modified per the CPUC.

<sup>11</sup> Design Dmax - the maximum steady state power the Project can continuously discharge from 100% State of Charge to 0% State of Charge measured by the electric revenue meter at the electrical delivery point. Please refer to the ESA for definitions.

owned storage assets at PV sites, see the requirements in Section III.G, PG&E-owned Energy Storage at PV Sites.

*Projects Interconnected to the California Independent System Operator (CAISO) Transmission System.* An ES Offer must have a Design Dmax of at least 10 MW.

Multiple ES resources can be aggregated in order to achieve the minimum project size for transmission interconnected offers, so long as: (1) the aggregate Design Dmax is at least 10 MW, (2) no single facility is less than 1 MW, (3) the aggregate product has a single CAISO Resource ID, (4) the aggregate product can be measured similar to having a single CAISO meter, (5) the aggregate product has one Locational Marginal Price node, (6) the aggregate product complies with the CAISO Tariff, and (7) the aggregate product is capable of being scheduled and dispatched by the CAISO or PG&E and optimized by PG&E as if the aggregated ES resources were one project, subject to the terms agreed upon by the Participant and PG&E. All aggregated Projects must be able to be charged and discharged to their full design capability. These requirements are necessary for PG&E to effectively manage and optimize its portfolio.

A Participant must be able to demonstrate the capability of the Project's Design Dmax as of the online date in the Agreement. PG&E is not seeking Projects that will be developed in phases after the online date.

*Pumped Hydro Projects.* For ES projects that are pumped hydro systems, the system may not be more than 50 MW in accordance with the Storage Decision.

### **III.B. CPUC Energy Storage Guidelines**

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Each ES resource must satisfy one or more of the following objectives, which were specified in the CPUC's Storage Decision:

- 1) The optimization of the grid, including peak reduction, contribution to reliability needs, or deferment of transmission and distribution upgrade investments;
- 2) The integration of renewable energy; and
- 3) The reduction of greenhouse gas ("GHG") emissions.

### **III.C. Certain Performance and Operational Requirements**

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- 1) ES resources must have a fifteen (15) minute minimum discharge duration. For Distribution deferral projects and projects at PG&E-owned PV sites, please see the minimum discharge duration requirements indicated in Table III.1, Distribution Deferral Sites, and III.2, PGE-owned ES at PV sites below.

- 2) Stand-alone ES resources that will be bid into the CAISO (i.e., ESA and stand-alone PSA), must have a single exclusive CAISO resource ID, and be able to respond to the electronic signals of PG&E, third party SC, or CAISO systems (e.g., SCADA, AGC). For amendments to existing Agreements with PG&E, the ES resource must share the CAISO resource ID with the existing generation.
- 3) Stand-alone ES resources must directly interconnect into the CAISO or applicable distribution provider and have a single dedicated CAISO-approved meter located on the high side of a step-up transformer. For amendments to existing Agreements with PG&E, the ES resource must share the CAISO-approved meter with the existing generation.
- 4) Participant may Offer Projects that will be energy-only (not fully deliverable under the CAISO Tariff requirements) or capable of delivering RA value (fully deliverable under the CAISO Tariff requirements). If Participant's Offer includes RA as part of the Product, then the Project must meet the applicable CPUC requirements for duration and CAISO requirements for deliverability as well as any other requirements that will enable PG&E to receive all of the RA benefits associated with the Project.
- 5) Except for RA-only Products, PG&E requires Offers in which PG&E is the sole off-taker of the Products from the Project. Participants will not be allowed to sell, deed, grant, convey, transmit, or otherwise provide any energy, capacity, ancillary services or any other related electricity product, including capacity attributes or other benefits associated with the output of the Project, to an entity other than PG&E.
- 6) Specific operating flexibility or constraints must be defined by the Participant.

### **III.D. Electric Interconnection**

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PG&E does not require Participants to submit an application for an interconnection study to the CAISO or applicable distribution provider at the time of Offer submission. However, Participants must still submit any and all portions of applicable interconnection studies (e.g., Cluster 7 Phase 1 Studies) that have been completed at the time of Offer submission. The ES resource must have an Interconnection Agreement prior to commercial operation<sup>12</sup>.

Additional interconnection guidance for specific agreement types is provided below.

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<sup>12</sup> Projects will need to obtain a wholesale interconnection agreement. See the applicable distribution providers' or PG&E's Wholesale Electric Generation Interconnection site: <http://www.pge.com/en/b2b/energytransmissionstorage/newgenerator/index.page>. Note that Electric Rule No. 21 does not result in a wholesale interconnection agreement.

## ESA

For Offers that would execute an ESA, the Participant must establish a valid and active interconnection application by April 30, 2015<sup>13</sup>.

### ES Added to Existing PG&E Agreements

Projects proposed as additions to existing PG&E agreements may need to obtain a new interconnection or a material modification determination to their existing interconnection agreement – this would be determined by the CAISO or applicable distribution provider on a case-by-case basis. These are solely Participant responsibilities.

### PSA – Distribution Deferral Projects

Participants submitting Offers for utility-owned distribution deferral assets (Section III.F, PG&E-owned Distribution Deferral Asset) are not required to go through the formal Wholesale Electric Generation Interconnection process. However Participants will be responsible for all interconnection study costs, distribution upgrades, and interconnection facilities required to interconnect the Project, and will need to negotiate interconnection terms with PG&E.

### PSA – PG&E PV Sites ~~or Stand-Alone~~

Participants submitting Offers for utility-owned ES at a PG&E-owned PV generation site (Section II.B.4.2) ~~or Offers for stand-alone utility-owned ES (Section II.B.4.3)~~ will be responsible for all activities and costs associated with obtaining interconnection, including interconnection study costs, network upgrades, and interconnection facilities as determined via the relevant interconnection process. ~~For such PSA Stand-Alone Offers, Participants must establish a valid and active interconnection application by April 30, 2015<sup>13</sup>. For PSA Offers at a PG&E-owned PV generation site, Participants do not need to establish a valid and active interconnection application by April 30, 2015. After PSA contract execution, the successful Participant will need to work with our Electric Generation Interconnection group to determine which interconnection process is required. As the existing interconnection net capacity will not be increased, it is anticipated that Participants will submit a request for material modification review.~~

### ~~PSA – Stand-Alone~~

~~Participants submitting Offers for stand-alone utility-owned ES (Section II.B.4.3) will be responsible for all activities and costs associated with obtaining interconnection,~~

<sup>13</sup>For projects that must be studied via a cluster process, note that the CAISO's transmission cluster window is only open April 1 through April 30, 2015, and that PG&E's wholesale distribution cluster application window is only open March 1 through March 31, 2015.

[including interconnection study costs, network upgrades, and interconnection facilities as determined via the relevant interconnection process. For PSA Stand-Alone Offers, Participants must establish a valid and active interconnection application by April 30, 2015<sup>13</sup>.](#)

**III.E. Public Funding**

Projects receiving funding in part from local, state, and federal public programs, such as Public Interest Energy Research (“PIER”) and Electric Program Investment Charge (“EPIC”), may count toward the procurement targets.

Funding from other third party public sources not listed must be disclosed.

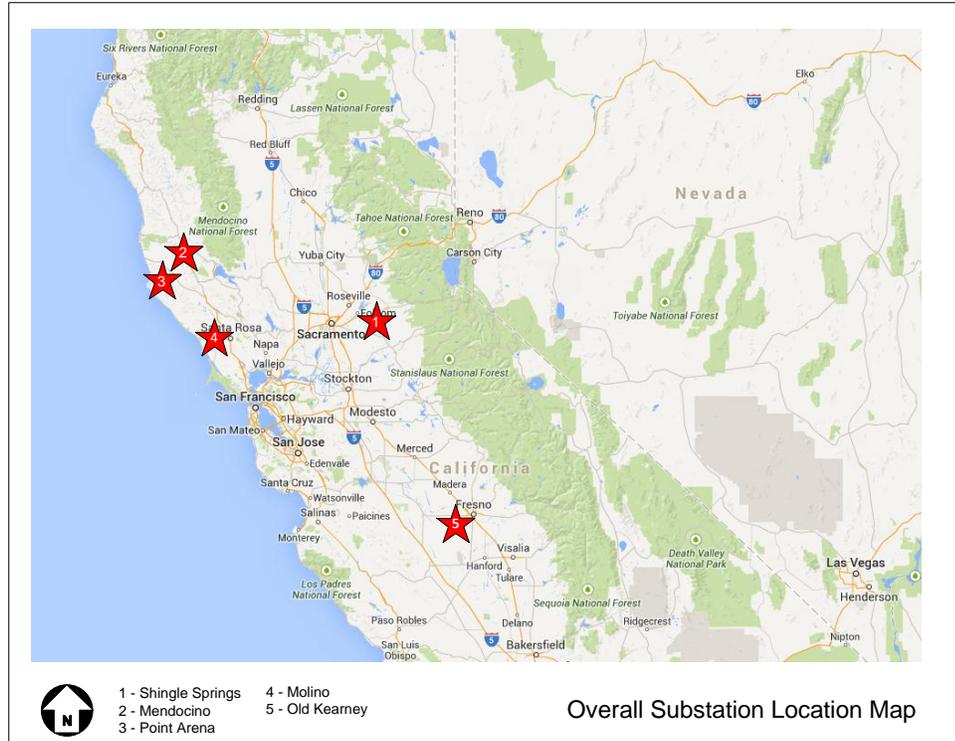
**III.F. PG&E-owned Distribution Deferral Assets**

The table below highlights certain of the minimum requirements for Offers for the Distribution Deferral Assets.

**Table III.1: Distribution Deferral Sites**

<b>Location</b>	<b>Size (MW)</b>	<b>Duration (Hours)</b>	<b>Guaranteed Site Specific Required Duty Cycle<sup>14</sup></b>	<b>Guaranteed Commercial Operation Date (Latter of the two dates)</b>
Shingle Springs Bank 2 – Cameron Park, CA	4.0	4.0	1 per day, up to 365 days per year	May 1, 2017, or 12 months after CPUC approval
Mendocino Bank 2 – Redwood Valley, CA	1.0	2.0	1 per day, up to 365 days per year	May 1, 2018, or 12 months after CPUC approval
Point Arena Bank 1 – Point Arena, CA	1.0	2.0	1 per day, up to 365 days per year	May 1, 2018, or 12 months after CPUC approval
Molino Bank 1 – Sebastopol, CA	1.0	2.0	1 per day, up to 365 days per year	May 1, 2017, or 12 months after CPUC approval
Old Kearney Bank 3 – Fresno, CA	1.0	2.0	1 per day, up to 365 days per year	May 1, 2017, or 12 months after CPUC approval

<sup>14</sup> Site Specific Required Duty Cycle: Starting from 100% state of charge (SOC) and without interruption, discharge of the system at maximum power discharge for the site-specified Discharge Duration, followed by full charge of the system, followed by discharge of the system at maximum power discharge for ½ the site-specified Discharge Duration, followed by full charge of the system. Up to 365 days/year is based on ES availability after accounting for planned maintenance and/or forced outages.



**Figure III.1: Five Distribution Deferral Locations**

Further information on these distribution deferral sites can be found in Appendix E1, Distribution Deferral Substation Location Maps.

**III.G. PG&E-owned Energy Storage at PV Sites**

PG&E has identified three PG&E-owned PV generation sites that would be candidates for PSAs for utility-owned Projects.

**Table III.2: PG&E-owned ES at PV sites**

Site	Nominal Voltage At Connection Point (see note 1)	Guaranteed Dmax (MW) at Year 1- 10 (see note 2)	Guaranteed Discharge Duration (hours)	Guaranteed Site Specific Required Duty Cycle
<a href="#">GuernseyGates</a> <a href="#">17115 W. Gale Ave.,</a> <a href="#">Huron, CA 93234</a> <a href="#">21024 10 1/2 Avenue</a> <a href="#">Hanford, CA 93234</a>	12.47kVAC	4MW	4	1 full discharge and charge per day, for 365 days per year for minimum of 10 years
Huron (see note 3) Corner of West Gale Avenue and South Lassen Ave (Hwy 269), Huron, CA 93234	12.47kVAC	4MW	4	1 full discharge and charge per day, for 365 days per year for minimum of 10 years

<b>Stroud W. Kamm Ave west of S. Lassen Ave (Hwy 145) Helm, CA</b>	12.47kVAC	4MW	4	1 full discharge and charge per day, for 365 days per year for minimum of 10 years
<b>Notes:</b> 1. The voltages listed are nominal only. A. The equipment connected to the 12.47kVAC bus shall be at least 15kV class equipment, typical voltage range is from 0VAC to 13.8kVAC. 2. These values are minimum total output power for the Energy Storage Systems (ESS) at each site. Dmax of 4 MW is the minimum output for duration of 4 hours. This system should be a modular system made up of smaller units (say 500kW or 1 MW) in parallel to give the total of 4 MW. 3. Huron is on the west side of South Lassen Ave (Hwy 269) on West Gale Ave.				

### III.H. PG&E-owned Stand-alone Energy Storage

Offers for Stand-alone Projects to be acquired by PG&E on a turnkey-basis must be located in PG&E’s service territory. These Projects would be wholesale resources PG&E would own and operate. Participants submitting such an Offer must also submit an equivalent Offer for an ESA for the same Project.

## IV. Credit

Upon execution of an Agreement with PG&E, the Participant must post collateral to PG&E to mitigate PG&E’s risk in the event that the Project is not constructed or placed into commercial operation, or the Participant is otherwise unable to meet the conditions of the Agreement. Each of the Agreements require that the Participant post collateral with PG&E prior to and following commercial operation of the facility in varying amounts and form, as provided in the applicable Agreement. If providing a Letter of Credit, please review carefully the Letter of Credit requirements set forth in the applicable Agreement. For reference, Table IV.1 below highlights a few of the collateral requirements in each of the Agreements:

**Table IV.1: Credit/Collateral Requirements**

Contract Options	ESA	Amendment to Existing Power Purchase Agreement	Resource Adequacy Confirmation	PSA (Distribution Deferral Sites)	PSA (PG&E’s PV Generation Sites)	PSA (Stand-Alone Energy Storage)
<b>Pre-Commercial Operation Date (COD)</b>						
<b>Project Development Security (“PDS”)</b>	\$15/kW at Execution, and an additional \$45/kW at CPUC Approval (total posted PDS of \$60/kW)	\$15/kW at Execution and an additional \$45/kW at CPUC Approval (this PDS requirement is for the energy storage portion only)	\$15/kW at Execution, and an additional \$45/kW at CPUC Approval (total posted PDS of \$60/kW)	\$15/kW at Execution, and 10% of purchase price at CPUC Approval	\$15/kW at Execution; and at least an additional \$45/kW plus \$x – for security for license for potential dismantling/de-commissioning, at CPUC Approval	\$15/kW at Execution, and an additional \$45/kW at CPUC Approval

Contract Options	ESA	Amendment to Existing Power Purchase Agreement	Resource Adequacy Confirmation	PSA (Distribution Deferral Sites)	PSA (PG&E's PV Generation Sites)	PSA (Stand-Alone Energy Storage)
					plus \$x – if upgrades or other modifications needed to be paid to Distribution Provider	
<b>Post-COD</b>						
<b>Delivery Term Security (“DTS”)</b>	\$125/kW or 10% of fixed capability payments up to 3 years, whichever is higher	\$125/kW or 10% of fixed capacity payments up to 3 years, whichever is higher (this DTS requirement is for the energy storage portion only)	\$125/kW or 10% of fixed capability payments up to 3 years, whichever is higher	N/A	N/A	N/A
<b>Post Closing Collateral for Performance and Warranty Periods</b>	N/A	N/A	N/A	10% of the purchase price plus an acceptable warranty by an issuer acceptable to PG&E	10% of the purchase price plus an acceptable warranty by an issuer acceptable to PG&E	10% of the purchase price plus an acceptable warranty by an issuer acceptable to PG&E

## V. Terms for RFO Participation

### V.A. Agreement by Participant

Each Participant submitting an Offer shall provide their electronic signature of a duly authorized officer of Participant in the Offer Form. By providing such signature the Participant (a) agrees to be bound by all terms, conditions and other provisions of this RFO and any changes or supplements to it that may be issued by PG&E, and (b) makes the following representations and warranties:

1. Participant has read, understands, and agrees to be bound by all terms, conditions and other provisions of the RFO.
2. Participant has had the opportunity to seek independent legal and financial advice of its own choosing with respect to the RFO and all Appendices to the RFO.
3. Participant is not an affiliate of PG&E, PG&E Corporation, or any of their affiliates.
4. Participant has obtained all necessary authorizations, approvals and waivers, if any, required of Participant as a condition of: (i) submitting its Offer and, if Participant's

Offer is selected; (ii) executing an Agreement with PG&E in the form submitted with its Offer, or at the conclusion of negotiations.

5. Participant is submitting its Offer subject to all applicable laws including, but not limited to, the Federal Power Act and all amendments thereto, and Public Utilities Code section 454.5, and all amendments thereto.
6. Participant represents that it has carefully considered the terms and conditions of its Offer and that it is submitting its Offer in good faith, such that PG&E may reasonably expect Participant to enter into a definitive Agreement, and to negotiate, if requested by PG&E, as provided in Section XII, Execution of Agreement, below.
7. Participant has not engaged in and will not engage in communications with any other Participant in the RFO concerning any terms contained in Participant's Offer, unless explicitly authorized by PG&E, and has not engaged in activities in violation of State or Federal antitrust laws or other unlawful or unfair business practices in connection with the RFO ("Prohibited Communication Activities").

Notwithstanding the foregoing, Participant may engage in communications with its advisors, counsel, experts or employees who have a need to know the content of the communications and have agreed to keep such information confidential (collectively, "advisors"). In addition, Participant may engage in communications with other Participants submitting an Offer in the RFO and their advisors ("Other Participants"), so long as: (1) such Other Participants are under common ownership and control with Participant; (2) Participant and Other Participants do not engage in Prohibited Communication Activities; and (3) in the event Participant and Other Participant share a common advisor, Participant has, prior to sharing communications with such Other Participant and the common advisor, provided PG&E with (a) notice of such Other Participant and common advisor and (b) an attestation that Participant has not and will not engage in Prohibited Communication Activities with either the Other Participant or the common advisor.

8. If Participant's Offer is selected for the Shortlist and Participant accepts the position on the Shortlist, then Participant agrees to execute a Confidentiality Agreement, to negotiate in good faith, and to inform PG&E if the Project that is the subject of the Offer on the Shortlist has been submitted into another solicitation with PG&E or any other entity.
9. If a Participant is submitting an Offer jointly with other entities, and the Offer is selected for the Shortlist, PG&E may require, as part of the shortlisting process, additional representations and warranties, along with additional documentation, from all entities involved in the joint Offer (see Section VI.D, Required Information, below).

10. Participant will promptly notify PG&E of any change in circumstances that may affect its ability to fulfill the terms of its Offer, at any time from Offer submission to PG&E's acceptance of the Offer, as evidenced by PG&E's execution of an applicable agreement, or Participant's withdrawal of the Offer.

A BREACH BY ANY PARTICIPANT OF THE REPRESENTATIONS AND WARRANTIES IN SECTION V.A OF THIS SOLICITATION PROTOCOL, IN ADDITION TO ANY OTHER REMEDIES THAT MAY BE AVAILABLE TO PG&E UNDER APPLICABLE LAW, IS GROUNDS FOR IMMEDIATE DISQUALIFICATION OF SUCH PARTICIPANT FROM PARTICIPATION IN THE RFO AND, DEPENDING ON THE NATURE OR SEVERITY OF THE BREACH, MAY ALSO BE GROUNDS FOR TERMINATING THE RFO IN ITS ENTIRETY.

#### **V.B. PG&E's Reservation of Rights**

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This RFO is an invitation to submit Offers to PG&E; it does not constitute an offer to buy and creates no obligation to execute any Agreement or to enter into a transaction under an Agreement as a consequence of the RFO. PG&E reserves the right to request information from a Participant at any time during the solicitation process. PG&E reserves the right, in its sole discretion, to reject any Offer at any time for any reason, including but not limited to grounds that the Offer does not conform to the terms and conditions of this RFO or contains terms that are not acceptable to PG&E. PG&E also retains the discretion, in its sole judgment, at any time; (a) to formulate and implement new or additional criteria for the evaluation and selection of Offers; (b) to negotiate with any Participant or withdraw PG&E's Shortlist selection; or (c) to modify this RFO as it deems appropriate to implement the RFO and to comply with applicable law or other direction provided by the CPUC. In addition, PG&E reserves the right to either suspend or terminate this RFO at any time for any reason. PG&E will not be liable in any way, by reason of such withdrawal, rejection, suspension, termination or any other action described in this paragraph to any third party, including any Participant. PG&E will not reimburse the Participant for its expense of participating in this RFO under any circumstances.

#### **V.C. Safety**

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PG&E is committed to providing safe utility (electric and gas) service to its customers. As part of this commitment PG&E may seek information from Participants regarding the safety history and practices of the entities that will construct, operate, or maintain the Projects and safety information related to the technology for the Project. For example, Projects selected by PG&E may need to provide an independent third party engineer report detailing the safety of the technology and verifying the safety history and practices of the entities identified by Participant to construct and operate the Project. Each of the Agreements will contain specific requirements intended to ensure that the entities that construct, operate, or maintain the Project, as applicable, do so in a safe, reliable and efficient manner that

reasonably protects the public health and safety of California residents, business, employees, and the community.

## **V.D. Shortlist Offer Deposit**

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If Participant is notified that it is eligible for PG&E's Shortlist and accepts the Shortlist position, then the Participant must post a deposit (the "Shortlist Offer Deposit") in the amount of \$3 per kilowatt (kW) of Design Dmax for each Offer on the Shortlist before 5:00 P.M. PPT on the 10<sup>th</sup> business day after receiving such notice. Participant shall maintain the Shortlist Offer Deposit until the termination of negotiation with PG&E or as otherwise provided pursuant to the terms of the Agreement negotiated by PG&E and Participant. PG&E reserves the right to discontinue negotiations with a Participant on the Shortlist or to reject the Offer on the Shortlist at any time for any reason without liability to PG&E.

### **1. Purpose of Shortlist Offer Deposit**

The Shortlist Offer Deposit is intended to secure the obligation of each Participant to enter into a definitive Agreement, or negotiate and execute a definitive Agreement, as expressly provided in Section XII, Execution of Agreement, below.

### **2. Form of Shortlist Offer Deposit**

The form of the Shortlist Offer Deposit may be either: (a) a cash deposit, or (b) a Letter of Credit. These two options are detailed below. NOTE: If the Participant fails to submit the Shortlist Offer Deposit within the required time period, the Participant's Offer may be rejected and removed from the Shortlist.

#### **a) Cash Deposit**

Cash may be deposited with PG&E to be held as collateral through a wire transfer, as instructed in the Shortlist Notification. PG&E will pay interest on each cash deposit, calculated on a monthly basis and compounded at the end of each calendar month, from the date on which the cash is fully deposited to the date on which the deposit is returned to the Participant. The applicable interest rate will be the rate per annum equal to the Monthly Federal Funds Rate (as reset on a monthly basis, as of the first day of the month, based on the latest month for which such rate is available) as reported in Federal Reserve Bank Publication H.15-519 or its successor publication ("Interest Rate"). The Interest Rate shall be calculated based on a three hundred sixty (360) day year and shall be payable upon the return of the cash deposit.

#### **b) Letter of Credit**

A Letter of Credit posted by a Participant as collateral must satisfy all of the requirements below.

“Letter of Credit” means an irrevocable, non-transferable, stand-by letter of credit in the form attached hereto as Appendix G1, (a) issued either by (i) a U.S. commercial bank or (ii) a U.S. branch of a foreign commercial bank that meets the following conditions: (A) it has sufficient assets in the U.S. as determined by PG&E, and (B) it is acceptable to PG&E in its sole discretion; and (b) for which the issuing U.S. bank or foreign bank, must have a Credit Rating of at least “A-” from S&P or “A3” from Moody’s, with a stable outlook designation. In the event the issuer is rated by both rating agencies and the ratings are not equivalent then the lower rating will apply. If the Letter of Credit is issued by a branch of a foreign bank, PG&E may require changes to the form Letter of Credit. All costs of the Letter of Credit shall be borne by Participant. The Letter of Credit should be sent by overnight delivery to:

**Pacific Gas and Electric Company  
Attn: Manager, Credit Risk Management  
77 Beale Street, Mail Code B28L  
San Francisco, CA 94105**

### **3. Return of Shortlist Offer Deposit**

The Shortlist Offer Deposit will be returned to Participant by PG&E under one or more of the following conditions:

- a) Upon execution of the Agreement and Seller’s submission of the collateral required under the Agreement;
- b) PG&E’s rejection of the Offer subsequent to Shortlist selection; or
- c) In the course of negotiations, if PG&E and Participant cannot agree on the terms of the Offer and Agreement.

### **4. Forfeiture of Shortlist Offer Deposit**

The Participant will forfeit the Shortlist Offer Deposit in its entirety due to: (i) any material misrepresentation in information submitted in Participant’s Offer; (ii) Participant unilaterally withdrawing its Offer from the Solicitation; or (iii) a breach of this Solicitation Protocol. In the event that Participant forfeits the Shortlist Offer Deposit, PG&E will be entitled to draw upon the Shortlist Offer Deposit in its entirety as payment for direct and indirect damages incurred in connection with the Participant’s misrepresentation or breach of this Solicitation Protocol.

### **5. Shortlist Offer Deposit as Security**

PG&E may retain any cash deposit or draw on any Letter of Credit provided as a Shortlist Offer Deposit as security under an executed Agreement in the event that Participant fails to provide additional security and/or agrees to PG&E's retention of the Shortlist Offer Deposit as collateral in accordance with the terms of the executed Agreement, if applicable.

## VI. Offer Submittal Process

### VI.A. Submittal Process Overview

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All Offers must be received by February 17, 2015 at 1:00 P.M. (PPT), as specified in Table I.2, PG&E Energy Storage Solicitation Schedule.

**Submitting Documents:** All Offers for this RFO **must** be submitted electronically through Power Advocate. Prior to submitting an Offer, Participants must register with Power Advocate. PG&E strongly encourages Participants to register with Power Advocate well before Offers are due. PG&E will post detailed instructions on the 2014 ES RFO website for submitting Offer(s) and using the online platform. The Power Advocate [link](https://www.poweradvocate.com/pR.do?okey=46155&pubEvent=true) is: <https://www.poweradvocate.com/pR.do?okey=46155&pubEvent=true> (Event 46155: 2014 Energy Storage RFO).

Power Advocate functions in most browsers; however it may not work as well in browsers older than Internet Explorer version 8.

Each Offer should be uploaded as a Commercial and Administrative document type. If submitting more than one Offer, each Offer should be in separate zip files. Please make sure that file names for your submittals do **not** contain any special characters such as \*&#, and please keep file names short, but do include short references to Participant's name (such as an acronym) and the appendix (e.g., App B).

**Electronic Document Formats:** Electronic documents must be submitted as Microsoft Word, Microsoft Excel, or pdf files, as identified in Section VI.D, Required Information. However, maps or drawings may be in alternate formats (e.g., jpg, kmz) as appropriate. Each Appendix must be a separate folder or document, not one long pdf. To the extent possible, pdf files should be provided in a searchable format. The Participant should not provide documents in other electronic formats, unless specifically requested.

### VI.B. Need for Complete Offer Packages

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Each Participant's Offer must be complete at the time of submission. Participant's failure to provide all required information may prevent PG&E from being able to evaluate and rank the Offer, which means that the Offer may not be considered for the Shortlist.

### VI.C. Number of Offers and Variations Allowed Per Seller

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Participants may submit up to twelve (12) Offers. Participants may submit one Offer for each Project at a particular location, using a particular ES technology, and for a particular contract type (e.g., ESA or PSA); varying these attributes are substantial changes and are considered new Offer(s).

Each Offer may include up to five (5) variations (i.e., the original Base Offer and 4 additional variations of that Offer). A variation may alter such attributes as delivery term, price, commercial operation date, duration of charge/discharge, capacity, or operational characteristics such as ramp rates.

### VI.D. Required Information

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Offers must contain all required information and must be organized in accordance with these instructions.

Participants must complete the following documents: (1) the initial offer package (see Section VI.D.1, Offer Package, below); and (2) the post-shortlist package, if PG&E selects the Participant's Offer for the Shortlist (see Section VI.D.2, Post-Shortlist Documents *[if applicable], below*).

Note on Joint Offers: If a Participant is submitting a joint Offer with another Participant, each Participant will need to be registered as a separate Participant in Power Advocate from any other entity submitting an Offer and PG&E may require additional documentation or conditions, such as retaining separate legal counsel, restricting the sharing of certain information, or requiring all parties to the joint Offer to execute a modified Confidentiality Agreement and agree to, and execute, modified terms for RFO participation, similar to those set forth in Section V.A, Agreement b Participant.

#### 1. Offer Package

Provide an **Introductory Letter** that describes the project and a description of the Offer information (e.g., price, term, size, technology), including identification of each variation proposed, as applicable. In addition, complete all of the Appendices listed in Table VI.1, below.

Address any potential changes to the Project due to an Offer variation(s) in the appropriate Appendices. A separate Offer Form is required for each Offer variation, but an entirely new offer package is not required; there is no need to submit unchanged, duplicate appendices if the information is the same; but please provide a short note indicating which sections are duplicative over multiple offer variations.

Any operational limitations on the ES resource due to technology constraints or other factors must be specifically identified in the Offer Form (Appendix A) and the Project Description (Appendix B), and must be substantiated in terms of operational criteria, technical limitations, permit requirements, or environmental regulations.

**Table VI.1: Energy Storage RFO Offer Package**

<b>Appendix</b>	<b>Title</b>	<b>Description</b>	<b>Format</b>
	Introductory Letter	Describe the Project and Offer information. A sample introductory letter outline is provided.	MS Word
A	Offer Form	Provide the requested information.	MS Excel
B1	Project Description	Describe the existing or proposed Project, format as single spaced, and include the requested information.	MS Word
B2	Site Control	Provide information relating to the Project's location and generation-tie line ("Gen-Tie") route as requested.	MS Word, PDF
B3	Project Milestone Schedule	Provide schedule to support submitted online date.	MS Word
B4	Experience Qualifications	Describe the Participants experience and staff qualifications, including but not limited to information requested.	MS Word
B5	Electric Interconnection	Point of interconnection, status of Project's studies and most recent interconnection study (if available).	MS Word, PDF
B6	Organizational and Finance Information	Provide Participant corporate or organizational and finance information.	MS Word
B7	PSA Additional Information	Information for Projects to be acquired by PG&E under a purchase and sale agreement	MS Word
C	FERC 717 Waiver	Authorizes the disclosure of Participant's transmission-related information to PG&E's marketing or merchant business unit ("PG&E Merchant").	MS Word
D	Confidentiality Agreement	Participants should submit a redline of the Confidentiality Agreement with the Offer Package if they would like to propose modifications <sup>15</sup> . Participants must execute and return a Confidentiality Agreement when accepting a position on the Shortlist.  Please provide BOTH a PDF AND an MS Word version.	MS Word, PDF

<sup>15</sup> Participants must identify the entity or entities who will be signing the Confidentiality Agreement.

Appendix	Title	Description	Format
F1b	Term Sheet – for ESA and non-RPS PPA Amendments	Each document identifies certain terms and conditions in PG&E’s form Agreements. Participant should populate the applicable term sheet (i.e., Appendix F1b, or F6), indicating whether Participant agrees to PG&E’s form Agreement language (agreements are provided in Appendix F <sup>16</sup> ) for each term, or noting any requested changes to the form language. Prior to completing the term sheet, Participant should carefully review the form Agreements	MS Word
F3a – F3c	RA Confirm and EEI		
F6	Term Sheet – PSA Stand-Alone		
F7	PSA Summary Sheet		
		For RA Confirms, please mark up the RA Confirm and EEI cover sheet (Appendices F3a – F3c).	
		For PSAs, Participants should complete a PSA Summary Sheet (Appendix F7). In addition, Participants interested in a PSA for Stand-Alone ES should complete the Term Sheet for the PSA Stand-Alone (Appendix F6).	

PG&E may seek information from Participants regarding the safety history and practices of the entities that will construct, operate, or maintain the Projects and safety information related to the technology for the Project.

## 2. Post-Shortlist Documents (if applicable)

If the Participant is notified that it is eligible for PG&E’s Shortlist and accepts the Shortlist position, then the Participant must complete the Appendices listed in Table VI.2, below. In addition, the Participant will need to provide a **Shortlist Offer Deposit** as described in Section V.D, Shortlist Offer Deposit, above, by May 8, 2015. Any delay in providing the Appendices below will impact the Participant’s Shortlist position.

**Table VI.2: Energy Storage RFO - Post-Shortlist Appendices**

Appendix	Title	Description	Format
F or Existing Agreement	Redline of Procurement Agreement	See description of various forms of Agreements in Section II.B, Agreement Types.	MS Word
G1	Letter of Credit (if	Provide the requested Letter of Credit information, if using a Letter of Credit for the	MS Word

<sup>16</sup> The RPS PPA is not included in Appendix F. Sellers seeking amendments to an existing RPS PPA should refer to their existing RPS PPA.

Appendix	Title	Description	Format
	applicable)	Shortlist Offer Deposit (see Section V.D, Shortlist Offer Deposit, for more information on the two accepted forms for the Shortlist Offer Deposit).	
G2	Request for Taxpayer ID (W-9) Form (if applicable)	Provide the requested information if posting a cash deposit.	PDF
	Interconnection Application	If not already provided, submit a copy of the relevant interconnection application.	MS Word, PDF

## VII. Pricing

Participants are required to provide a complete Offer package, and include pricing in their Offer Form depending on the Contract Type, as described below.

1. ESA: Capability Payment Price in \$/kW-yr and Variable O&M Price (\$/MWh) (for Delivered Discharge Energy)
2. Amendment of Existing Conventional Generation PPA: Modification of existing prices
3. RA Confirmation: RA price in \$/kW-mo (of offered RA quantity)
4. PSA: Purchase Price (\$) and O&M Costs

## VIII. Evaluation of Offers

PG&E's Evaluation will apply "least-cost, best-fit" principles, using quantitative and qualitative criteria to evaluate the submitted Offers.<sup>17</sup>

### VIII.A. PG&E's Evaluation of Offers for Transmission- and Distribution-Connected Storage

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PG&E will evaluate Offers using both quantitative and qualitative criteria. The quantitative criteria include Net Market Value (NMV) and Portfolio Adjusted Value (PAV).

NMV benefits include net energy, capacity and ancillary services value. NMV costs include the offered fixed and variable pricing in the applicable Agreement.

<sup>17</sup> Participants will be required to submit accurate figures, descriptions and calculations with their offers.

PAV may include adjustments that are relevant to PG&E's total energy portfolio, specifically for, but not limited to, location, deferral of replacement of T&D project costs, increased efficiency for fossil generation and renewable generation curtailment support.

### **VIII.B. PG&E's Evaluation of Offers Associated with Existing Energy Generation Facilities**

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Projects that are associated with existing energy generation facilities currently owned by PG&E (as specified in Section III.G) under contract with PG&E may require further evaluation. Because this ES resource may be integrated with and dependent upon the operation of the associated generation facility, the NMV and PAV of the storage Offer may be calculated as the NMV and PAV of the combined facility, minus the NMV and PAV of the generation facility alone. Depending on the exact configuration of the facility, including interconnection details such as whether the storage facility can be charged from the grid or only from the generation facility, co-location with a generation facility could increase or decrease the value of a storage project compared to an identical stand-alone storage project sited at a standard transmission or distribution connection point.

### **VIII.C. Details of PG&E's Evaluation Protocol**

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PG&E will evaluate each Offer using quantitative and qualitative criteria, which may include, but are not limited to:

#### Quantitative Attributes:

- a. Net Market Value (NMV)
  1. Benefits (Energy, Ancillary Services, Capacity)
  2. Fixed and Variable Costs
- b. Portfolio-Adjusted Value (PAV)
  1. Location
  2. Transmission Network Upgrade Cost
  3. T&D Investment Deferral Value
  4. Increased Efficiency of Fossil Generation
  5. Renewable Generation Curtailment Support

#### Qualitative Attributes:

- a. Project Viability
- b. Supplier Diversity
- c. Credit
- d. Contract Modifications
- e. Counterparty Concentration

- f. Technology Diversity
- g. Safety

## 1. Quantitative Attributes

### a) Net Market Value (NMV)

NMV compares an Offer's costs to its market value. NMV is calculated for each Offer as follows:

**Net Market Value:**  $NMV = (E + A + C) - (V + F)$

Where:

E = Energy Value

A = Ancillary Services (A/S) Value

C = Capacity Value

V = Variable Cost

F = Fixed Cost

The risks and uncertainties associated with an offer's costs and benefits will be considered as part of Market Valuation. These costs and benefits do not include the costs and benefits associated with an Offer's impact on PG&E's portfolio.

#### 1) Energy Value

PG&E will assess the market value<sup>18</sup> of the energy deliveries for each Offer based on a charging and discharging time series obtained for the Offer over its delivery term. The market value of the energy will be computed from the appropriate price curves for the corresponding Trading Hub (NP15, ZP26, or SP15) adjusted for its location. The Locational Marginal Price (LMP) multipliers may be used to incorporate congestion and losses specific for the location, and therefore value the contribution to transmission congestion relief. The cost of Charging Energy (grid energy used to charge Energy Storage) will also be included in the Energy Value.

#### 2) Ancillary Services (A/S) Value

For Offers that provide PG&E the ability to schedule and receive CAISO market revenues for A/S as defined under and in accordance with CAISO Tariff requirements, the incremental benefit of having A/S capability will be captured. PG&E notes that the A/S market is both limited and illiquid.

#### 3) Capacity Value

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<sup>18</sup> Market value of energy includes GHG compliance costs, so impact on GHG is implicitly included in energy value.

The value of Resource Adequacy (RA) capacity associated with each Offer will be determined based on the projected monthly quantity of Net Qualifying Capacity (NQC, for Generic RA) and Effective Flexible Capacity (EFC, for Flexible RA). Offers with RA that are expected to be found fully deliverable by the CAISO will be attributed the full Generic RA capacity value for its projected NQC.<sup>19</sup> To the extent that an Offer provides flexible capacity, the EFC capacity that is expected to count and meet the must-offer obligation for flexible RA will be evaluated at the projected monthly premium for flexible RA, and added to the Capacity Benefit.<sup>20,21</sup>

#### **4) Variable Cost**

Variable cost for an Offer will be calculated as the sum of hourly variable payments. Hourly variable payments will be based on the variable O&M (VOM) price multiplied by the discharge time series obtained for the Offer. Variable cost will also include the cost of fuel (other than grid energy) and/or start-up costs, if applicable, but does not include the market costs for Charging Energy. The contract VOM price will affect the discharge time series – all other things being equal, a lower VOM will result in more energy charging and discharging both in PG&E’s Evaluation and in actual operation.

#### **5) Fixed Cost**

Fixed Cost for an Offer will be calculated as the sum of projected monthly fixed payments, where applicable. Monthly fixed payments will be based on the capability payment price (\$/kW-yr) and the monthly contract capability.

Fixed Cost for a PSA Offer will be collected by PG&E’s Cost of Service Model to determine the revenue requirements (mainly depreciation, return, taxes and fixed O&M) based on initial capital costs and fixed O&M of the facility.

Each Offer will also be assigned an annual fixed overhead cost (independent of the size of the Project, but possibly dependent on the use case of the Project) representing administrative costs plus the cost of scheduling into CAISO markets.

In the case of an amendment to an existing RPS agreement, fixed cost will be the energy payment price (\$/MWh) proposed for the amended agreement.

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<sup>19</sup> See the CPUC’s Resource Adequacy program ([http://www.cpuc.ca.gov/PUC/energy/Procurement/RA/ra\\_history.htm](http://www.cpuc.ca.gov/PUC/energy/Procurement/RA/ra_history.htm)) and the CAISO Reliability Requirements (<http://www.caiso.com/planning/Pages/ReliabilityRequirements/Default.aspx>)

<sup>20</sup> See the CPUC’s current RA proceeding (Rulemaking 11-10-023) and the CAISO’s FRAC-MOO initiative <http://www.caiso.com/informed/Pages/StakeholderProcesses/FlexibleResourceAdequacyCriteria-MustOfferObligations.aspx>

<sup>21</sup> Please refer to the CAISO Tariff for definitions of capitalized terms.

## **b) Portfolio Adjusted Value (PAV)**

PG&E will calculate PAV to derive the value of each Offer from the perspective of PG&E's portfolio, not just from the market perspective. PAV may include adjustments to the NMV based on factors including, but not limited to: (1) location, (2) transmission network upgrade cost, (3) T&D investment deferral value, (4) increased efficiency for fossil generation, and (5) renewable generation curtailment support.

### **1) Location**

PG&E has a preference for Projects in its service territory. Offers for Projects in Northern California (north of Path 26 or NP26) will have an equal or higher PAV than comparable Offers from resources outside of NP26.

### **2) Transmission Network Upgrade Cost**

The customer impact of the reimbursable portion of network upgrade costs may also be considered in the selection process.

### **3) Transmission and Distribution System Investment Deferral Value**

In Section III.F, PG&E-owned Distribution Deferral Assets, PG&E provided locations and operational requirements where ES is an alternative to a distribution investment. For Offers that meet PG&E-identified operational requirements at the PG&E-identified locations, the value of deferred distribution investment costs will be estimated.

### **4) Increased Efficiency for Fossil Generation**

ES has the potential for allowing fossil generation to run with fewer startups and to operate more efficiently. Similarly, ES can avoid the amount of demand response dispatches. Not only would such efficiency reduce costs but also it would reduce greenhouse gas emissions. PG&E will estimate the cost of fuel, GHG compliance instruments, and start-ups that such ES resources can help avoid. Such avoided costs would differ among Offers due to the variation in characteristics of those Offers.

### **5) Renewable Generation Curtailment Support**

Higher penetration of renewable energy increases the likelihood of curtailment. Storage can help reduce the curtailment of intermittent generation, benefiting customers by increasing total generation from the renewable portfolio that contributes to meeting RPS requirements.

## **2. Qualitative Factors**

### **a) Project Viability**

Project Viability means the likelihood that the Project with an Offer can be successfully developed and then provide the Product and services required for the period stated in the Offer. This assessment is based on a review of the status and plans for key project activities (e.g. financing, site access, permitting, engineering, procurement, construction, interconnection, start-up and testing, operations, fuel supply, charging capability, etc.). PG&E has a preference for Projects that can demonstrate full charging capability through an independent engineer's report.

### **b) Contract Modifications**

PG&E will assess the materiality and cost impact of any of Participant's proposed modifications to Solicitation requirements and the applicable Agreement, as identified in the Term or Summary Sheet (Appendix F) to be provided with the Offer, and the marked Agreement to be provided following Shortlisting. PG&E strongly encourages Participants to only make those changes to the Agreement associated with their Offer that address their particular technology. PG&E will give additional consideration to Participants that agree to take on additional risk beyond what is specified in the Agreement or Term Sheet. In the RPS PPA, specially-marked contract terms are non-modifiable by CPUC order and cannot be modified.

### **c) Credit**

PG&E may consider the Participant's capability to perform all of its financial and financing obligations under the Agreements and PG&E's overall credit concentration with the Participant or its banks, including any of Participant's affiliates.

### **d) Supplier Diversity**

It is the policy of PG&E that Diverse Business Enterprises ("DBE") such as Women-, Minority- and Service Disabled Veteran-owned Business Enterprises ("WMDVBE") and Lesbian, Gay, Bisexual, and Transgender-owned Business Enterprises ("LGBT") shall have the maximum practicable opportunity to participate in the performance of Agreements resulting from this Solicitation. PG&E encourages Participants to carry out PG&E's policy and contribute to PG&E's supplier diversity goal by reaching greater than 30 percent of all procurement with DBEs.

Supplier Diversity is a consideration in the selection process. If Participant is selected and an Agreement is negotiated, the Agreement will include a requirement to make good faith efforts toward meeting the contracted supplier diversity target, and

successful bidder(s) will be expected to report payments made to DBEs to support the project upon request but no less than annually.

**e) Counterparty Concentration**

PG&E may consider the volume of energy or capacity already under contract from a particular counterparty, as well as Offers submitted in this RFO.

**f) Technology Diversity**

PG&E may consider technology diversity in its evaluation of Offers. Technology diversity may also include applications and attributes of ES technology types.

**g) Safety**

PG&E may seek information from Participants regarding the safety history and practices of the entities that will construct, operate, or maintain the Projects and safety information related to the technology for the Project.

Any or all qualitative factors may impact a Project's status for Shortlisting or Agreement execution.

## **IX. Confidentiality Agreement**

Except with PG&E's prior written consent, no Participant shall disclose its participation in this Solicitation (other than by attendance at any meeting held by PG&E with respect to the Solicitation) or collaborate on, or discuss with any other Participant or potential Participant bidding strategies or the substance of any Offer(s), including without limitation the price or any other terms or conditions of any Offer(s).

Except as provided below, all information and documents clearly identified by Participant as "Confidential" on the page(s) on which confidential information appears shall be considered confidential information. PG&E shall not disclose such information and documents to any third parties except for PG&E's or PG&E Corporation's, officers, directors, employees, agents, counsel, accountants, advisors, or contractors who have a need to know such information and have agreed to keep such information confidential and except as provided below.

It is expressly contemplated that materials submitted by a Participant in connection with this RFO will be provided to the CPUC, its staff, the Independent Evaluator, and PG&E's Procurement Review Group ("PRG"). PG&E will seek confidential treatment pursuant to D.08-04-023, General Order 66-C, and Public Utilities Code section 583, with respect to any Participant-supplied non-public RFO information and documents ("Participant's Confidential Information") that are submitted by PG&E to the CPUC for the purpose of obtaining CPUC Approval. PG&E will also seek confidentiality and/or non-disclosure agreements with the PRG

applicable to the Participant's confidential information. PG&E cannot, however, ensure that the CPUC will afford confidential treatment to a Participant's confidential information, or that those confidentiality agreements or orders will be obtained from and/or honored by the PRG or the CPUC.

With respect to any information or documents provided by the Participant, PG&E shall have the right to disclose to the CPUC, its staff, the Independent Evaluator, the PRG, CAISO, other control area operator or balancing authority and any other entity in order to comply with any applicable law, regulation, or rule or order issued by a court or entity with competent jurisdiction over PG&E, at any time, even in the absence of a protective order, confidentiality agreement or nondisclosure agreement, as the case may be, without notification to the Participant and without liability or any responsibility of PG&E to the Participant.

Once a Participant is selected for the Shortlist, the Participant must execute a Confidentiality Agreement in the form attached as Appendix D and return such Confidentiality Agreement within five (5) business days of notification of their selection in order to continue to participate in the RFO. Depending upon Participant's submittal in response to Appendix B6, PG&E may require additional Confidentiality Agreements with collaborating entities.

## **X. Procurement Review Group Review**

Following completion of the evaluation and PAV ranking of Offers, PG&E will submit the results of the evaluation and its recommendations to its PRG. Such information will include at least the all-in cost ranking of Offers, the consideration of non-price evaluation criteria, and PG&E's recommendations based on such information. PG&E has no obligation to obtain the concurrence of the PRG with respect to any Offer.

PG&E assumes no responsibility for the actions of the PRG, including actions that may delay or otherwise affect the schedule for this Solicitation, including the timing of the selection of Offers and the obtaining of CPUC Approval.

## **XI. Shortlist Notification to Participants**

The Solicitation schedule set forth in Section I.C, Schedule Overview, may be modified at PG&E's sole discretion. PG&E expects to be able to provide an e-mail notification to Participants whose Offers have been selected for the Shortlist, and invite each Participant on the Shortlist to conduct discussions and negotiations with PG&E regarding the offer selected for the Shortlist. PG&E anticipates notifying those Participants whose Offers were not Shortlisted shortly thereafter. As previously stated, PG&E may contact Participants prior to Shortlisting during the evaluation process to seek or notify Participants of deficiencies in their Offers or Offer Packages.

## **XII. Execution of Agreement**

By submitting an Offer, Participant agrees, if its Offer is selected for PG&E's shortlist, that it is prepared to (1) enter into a definitive Agreement consistent with the term sheet or mark-up of the Agreement submitted, and (2) negotiate and execute a definitive Agreement consistent with the mark-up of the form of Agreement submitted with the Participant's Offer and containing such other terms and conditions as may be mutually acceptable to PG&E and the Participant. PG&E's evaluation of a Participant's Offer and PG&E's shortlisting of a Participant will not constitute an agreement by PG&E to any of the Participant's modifications made to the form of Agreement submitted.

## **XIII. CPUC Approval**

Whether an Agreement goes into effect or not is expressly conditioned on PG&E's receipt of CPUC Approval, which will be more specifically defined in each of the Pro Forma Agreements and Term Sheet. At a minimum PG&E will require a finding from the CPUC that PG&E's entry into the Agreement satisfies PG&E's ES compliance requirement, that the terms are reasonable, and that PG&E will recover the costs incurred under the Agreement in its rates. Additionally, most Agreements will be subject to a no-fault termination if CPUC Approval does not occur within a specified period, as set forth in each of the applicable Agreements; CPUC Approval typically requires the approval of the Agreement by the CPUC to be final and non-appealable without any modifications that are unacceptable to either of the parties.

## **XIV. Waiver of Claims and Limitations of Remedies**

Except as expressly set forth in this Protocol, by submitting an Offer, Participant knowingly and voluntarily waives all remedies or damages at law or equity concerning or related in any way to the Solicitation, the Solicitation Protocol and/or any attachments to the Solicitation Protocol ("Waived Claims"). The assertion of any Waived Claims by Participant may, to the extent that Participant's Offer has not already been disqualified, automatically disqualify such Offer from further consideration in the Solicitation or otherwise.

By submitting an Offer, Participant agrees that the only forums in which Participant may assert any challenge with respect to the conduct or results of the Solicitation is through the Alternative Dispute Resolution ("ADR") services provided by the CPUC pursuant to Resolution ALJ 185, August 25, 2005. The ADR process is voluntary in nature, and does not include processes, such as binding arbitration, that impose a solution on the disputing parties. However, PG&E will consider the use of ADR under the appropriate circumstances. Additional information about this program is available on the CPUC's website at the following link:

[http://docs.cpuc.ca.gov/published//Agenda\\_resolution/47777.htm](http://docs.cpuc.ca.gov/published//Agenda_resolution/47777.htm)

Participant further agrees that other than through the ADR process, the only means of challenging the conduct or results of the Solicitation is a protest to PG&E's filing seeking CPUC Approval of one or more Agreements entered into as a result of the Solicitation, that the sole basis for any such protest shall be that PG&E allegedly failed in a material respect to conduct the Solicitation in accordance with this Protocol, and the exclusive remedy available to Participant in the case of such a protest shall be an order of the CPUC that PG&E again conduct any portion of the Solicitation that the CPUC determines was not previously conducted in accordance with the Solicitation Protocol. Participant expressly waives any and all other remedies, including, without limitation, compensatory and/or exemplary damages, restitution, injunctive relief, interest, costs, and/or attorney's fees. Unless PG&E elects to do otherwise in its sole discretion during the pendency of such a protest or ADR process, the Solicitation and any related regulatory proceedings related to the Solicitation, will continue as if the protest had not been filed, unless the CPUC has issued an order suspending the Solicitation or PG&E has elected to terminate the Solicitation.

Participant agrees to indemnify and hold PG&E harmless from any and all claims by any other Participant asserted in response to the assertion of a Waived Claim by Participant or as a result of a Participant's protest to an advice letter filing with the CPUC resulting from the Solicitation.

Except as expressly provided in this Protocol, nothing herein including Participant's waiver of the Waived Claims as set forth above, shall in any way limit or otherwise affect the rights and remedies of PG&E.

## **XV. Termination of the RFO-Related Matters**

PG&E reserves the right at any time, in its sole discretion, to terminate the RFO for any reason whatsoever without prior notification to Participants and without liability of any kind to, or responsibility of, PG&E or anyone acting on PG&E's behalf. Without limitation, grounds for termination of the RFO may include the assertion of any Waived Claims by a Participant or a determination by PG&E that, following evaluation of the Offers, there are no Offers that provide adequate ratepayer benefit.

PG&E reserves the right to change the Offer evaluation criteria for any reason, to terminate further participation in this process by any Participant, to accept any Offer or to enter into any definitive Agreement, to evaluate the qualifications of any Participant, and to reject any or all Offers, all without notice and without assigning any reasons and without liability to PG&E or anyone acting on PG&E's behalf. PG&E shall have no obligation to consider any Offer.

In the event of termination of the RFO for any reason, PG&E will not reimburse the Participant for any expenses incurred in connection with the RFO regardless of whether such Participant's Offer is selected, not selected, rejected or disqualified.