



SDG&E 2018 IDER RFO Bidders' Conference

Century Park East – Auditorium A

8680 Balboa Avenue
San Diego, CA 92123

By Phone: (844) 419-1768
Conf ID: 9698695

Audience link:

<https://intercall.webex.com/intercall/j.php?MTID=m251dab6ede7ca6c784e348282802c8d2>

January 26, 2018

1:00 – 4:00 pm (PDT)

The logo for San Diego Gas & Electric (SDGE) features the letters "SDGE" in a bold, black, sans-serif font. A thick red horizontal bar is positioned below the "SD" and "GE" parts, with a red diagonal slash cutting through the "E".

A  Sempra Energy utility[®]

Agenda

Time	Presenter	Topic
1:00	<i>Refreshments and Snacks</i>	
1:10	Evan Bierman	Safety Moment, Legal Disclaimers, Q&A Guidance
1:15	Stephen Taylor	SDG&E and Supplier Diversity
1:20	Barbara Sands	Overview of the Independent Evaluator's Role
1:25	Alan Dulgeroff	Welcome / Setting the Stage
1:30	Evan Bierman	High Level Solicitation Overview / Schedule
		Conformance Requirements
		Overview of Bidding Protocol
		Offer Submission Process (Power Advocate) / Most common mistakes to avoid
		Solicitation Evaluation Overview
2:30	<i>Short Break</i>	
2:40	Ted Roberts	Term sheet / Pro Forma Overview
2:50	Mason Withers	Collateral Requirements / Credit Application
3:00	Mike Turner	Interconnection Overview – Rule 21 / WDAT
3:15	<i>General Q&A/Break</i>	
3:25-4	<i>Working Session:</i> communication system and monitoring requirements	

Safety Moment

Safety first

- Emergency Evacuation Plan overview
- Assignments in the event of an emergency
 - Dial 911
 - CPR
 - AED

Logistics

- Restrooms
- Refreshments
- Housekeeping questions?

Legal Disclaimers: Anti-Trust Guidelines & Document Conflict

Anti-trust:

- All participants in today's meeting shall comply with anti-trust guidelines. These guidelines direct meeting participants to avoid discussions of topics or behavior that would result in anti-competitive behavior, including restraint of trade and conspiracy to create unfair or deceptive business practices or discrimination, allocation of production, imposition of boycotts and exclusive dealing arrangements.

Document Conflict:

- This presentation is intended to be a summary level discussion of the information and requirements established in the RFO Protocols. To the extent that there are any inconsistencies between the information provided in this presentation and the requirements in the RFO Protocols, the RFO Protocols shall govern.

General Q&A Guidance

- SDG&E posts questions and answers on the solicitation website: <https://www.sdge.com/2018IDERFO>
- Questions from today will be written down; all questions received and answers provided will be posted on the RFO website
 - Goal is to make information available to all potential respondents at the same time
- Questions can be submitted to IDERIncentivePilotRFO@semprautilities.com (and **MUST** cc the IE) at any time until the question submittal deadline
- Questions (and answers) will be posted to the website periodically
- Deadline to submit questions: Friday, February 2, 2018
 - SDG&E will post the final set of answers no later than February 6 (offers are due on Friday, February 9, 2018 at 12 PM)

Welcome / Setting the Stage

Alan Dulgeroff
Director – Electric System Planning

SDG&E and Supplier Diversity

Stephen Taylor
Generation and Supply Manager

Background on Diverse Business Enterprises (DBE) Program

- *SDG&E encourages Women, Minority, Disabled Veteran, Lesbian, Gay, Bisexual and Transgender (LGBT) Business Enterprises (“Diverse Business Enterprises” or “DBE”) to participate in the 2018 IDER RFO*
- *General Order (GO) 156*
 - GO 156 was adopted by the CPUC in 1986. Electric procurement reporting was added in 2012.
 - Sets rules governing the development of programs to increase participation of DBEs in procurement contracts from utilities as required by CPUC Code
 - Goal is to promote greater competition among utility suppliers by expanding the available supplier base and to encourage greater economic opportunity for women, minority, disabled veteran, and LGBT owned businesses historically left out of utility procurement
 - SDG&E encourages developers to utilize DBEs during various stages of project development and construction. SDG&E will require developers to identify and verify their DBE contractor and/or subcontractor spending, if any.

DBE Supplier Eligibility and Certification

- *SDG&E Support of DBE's*
 - Supplier diversity goals are part of every executives' department goals and are a component of every employee's compensation goals
 - 43% of SDG&E's total goods and services procurement dollars were spent with DBEs in 2016 and we expect similar results in 2017.
 - 21.6% and \$68 million of our energy procurement dollars were spend with DBEs in 2016
- *For certification* and eligibility under GO 156, a DBE firm must meet the following requirements:*
 - Must be a business enterprise:
 - that is at least 51% owned by a Woman, Minority, Disabled Veteran, or LGBT individual or group(s), or
 - if a publicly owned business, at least 51% of the stock of which is owned by one or more DBE individual(s) or group(s); and
 - whose management and daily business operations are controlled by one or more of those DBE owners

**Certification does not guarantee any business enterprise the right to bid or receive a contract*



DBE Supplier Eligibility and Certification (continued)

- *Obtaining Certification**
 - *Minority, Woman or LGBT owned companies*
 - California Public Utilities Commission (CPUC) Supplier Clearinghouse
<http://www.thesupplierclearinghouse.com/>
 - *Service Disabled Veteran Business*
 - State of California, General Services Office of Small Business and Disabled Veteran Business Enterprise Services (OSDS)
<http://www.dgs.ca.gov/pd/Programs/OSDS.aspx>
 - *Others Offering Certification*
 - Regional affiliates of the National Minority Supplier Development Council (NMSDC)
 - Small Business Administration 8(a) (SBA)
 - Women Business Enterprise Council (WBEC-WEST)
 - State and municipal government agencies

**Certification does not guarantee any business enterprise the right to bid or receive a contract*



Supplier Diversity Contact Information

SDG&E Supplier Diversity Team Websites

<http://www.sempra.com/about/supplier-diversity/>

<http://www.cpuc.ca.gov/puc/supplierdiversity/>

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Supplier Diversity Program Manager

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Steve Taylor

E&FP DBE Ambassador/Generation & Supply Manager

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858-654-6361



Role of the Independent Evaluator

Barbara Sands
PA Consulting

Independent Evaluator Introduction and Role

- Barbara Sands of PA Consulting will be the Independent Evaluators (“IEs”) for this solicitation. PA Consulting has acted as SDG&E’s IE for various procurement efforts in the past (2014 All-source, 2016 preferred resources)
 - The role of the IE is to ensure that SDG&E’s evaluation of bids is transparent and that all bidders are treated fairly and equitably
 - The IE is expected to assure that affiliate and utility owned bids are not favored
 - The IE oversees SDG&E’s Cost Development Team and Evaluation Team
 - The IE will also ensure that bid compliance decisions are fair
 - The IE oversees the modeling of the bids including how each bid is represented the models

The IE provides advice to SDG&E on evaluation issues as they arise



Independent Evaluator Contact Information

Any emails sent to SDG&E at
IDERIncentivePilotRFO@semprautilities.com
MUST also cc the IE:

Barbara Sands - Barbara.Sands@PAConsulting.com

High Level Solicitation Overview/ Schedule

Evan Bierman
Principal Origination Analyst

RFO Overview

- SDG&E is conducting a distribution capacity RFO in the following area:
 - *IDER Incentive Pilot RFO – Carlsbad – 3rd party only – for purposes of testing an incentive mechanism and a streamlined solicitation process.*
- **Product:**
 - **SDG&E is soliciting for firm distribution capacity only**
 - Amounts are shown in the Appendix B of the RFO document
 - Qualifying Distributed Energy Resources (DERs) as defined in the RFO
 - ▶ EE, DR, Renewables, Energy Storage and Distributed Generation¹
 - Other potential products / attributes (besides distribution capacity) may be sold to others

1 – See RFO and the DRP guidance ruling of February 6, 2015, available here:
<http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=5108>



RFO Authorization

- D.16-12-036 (“Decision Addressing Competitive Solicitation Framework and Utility Regulatory Incentive Pilot”) directs SDG&E to conduct the IDER solicitation
 - Approves the IOU’s applications to conduct the field demonstrations
 - Includes requirements for timing, data gathering and reporting
 - Contemplates third party participation
 - Addresses incrementality of NEM and SGIP (incremental services shall be considered)
 - Valuation components and evaluation discussion (appendix A)
 - Contracts
- Resolution E-4889, resolves and clarifies issues included in the Utilities’ Request for Offers (RFO) materials
 - Directs availability requirement
 - Addresses issue of incrementality
 - Contingency plan
 - Distribution planning assumptions
 - Cost effectiveness cap

RFO Overview, continued

- Project size: the project / program / hybrid resource must be capable of providing the firm distribution capacity listed in the RFO appendix B
- Contract(s): SDG&E will sign a maximum of one (1) contract per circuit. The contract for each circuit may, or may not, be with the same counterparty.
- Respondents do NOT need to offer distribution capacity on both circuits; you may offer capacity on one, or the other, or both. However, SDG&E will only proceed with pursuing a DER solution if solutions are available for both circuits (even if those come from different vendors).
- Contract term: SDG&E will contract through 2026.
- Number of offer variations: SDG&E is not setting a limit on number of offer variations

RFO Schedule

No	Item	Date
1	RFO Issued	Wednesday, January 10
2	Pre-Bid Conference / Bidder Outreach Event	Friday, January 26
3	Deadline for Respondents to submit questions	Friday, February 02
4	Answers to all questions will be posted on the RFO Website	Tuesday, February 06
5	RFO CLOSED: Respondent must upload offers to PowerAdvocate® no later than 12:00 PM PPT	Friday, February 09
6	SHORTLIST NOTIFICATION: SDG&E notifies Respondents whether their offers are shortlisted, contingently shortlisted, or rejected.	Tuesday, March 20
7	Respondents must indicate whether they accept or reject their shortlist position	Tuesday, March 27
8	Shortlisted Offers must post the shortlist acceptance fee	Monday, April 02
9	Execute contracts	Monday, June 25
10	SDG&E Submits Tier 2 Advice Letter with Agreements to CPUC for approval	Friday, June 29

Conformance Requirements

Evan Bierman
Principal Origination Analyst

Location

Carlsbad, CA

North San Diego
County

Circuits 303 &
783



Information is an approximation and therefore should not be relied upon for detailed analysis; information is subject to change at SDG&E's sole discretion



Carlsbad – SDG&E Customers

- Total customer composition of circuits 303 and 783 approximately:
 - Residential: approximately 10,000 customers
 - Small Commercial (peak load less than 20kW): less than 500 customers
 - Medium Commercial (peak load 20 to 200 kW): less than 100 customers
 - Large Commercial (peak load greater than 200 kW): much less than 100 customers
 - Agriculture: much less than 100 customers
- Post-contract customer acquisition support:
 - SDG&E may provide specific customer information to companies under contract with SDG&E as necessary and in accordance with privacy rules.
 - Companies must request data through the privacy office. Info can be found @ <https://energydata.sdge.com/showAboutProcess>
 - Companies must meet SDG&E's business requirements for needing and receiving the data (including adequate system requirements for storing and protecting the data), must have a signed contract including a non-disclosure agreement in place with SDG&E for the work the data pertains to, and must destroy or return the data after a specified period. Signed contracts do not guarantee the provision of data if other standardized requirements are not met.



SDG&E Planning Assumptions

- SDG&E is providing the following assumptions about distribution planning activity below. For reference, the table below contains forecast assumptions in nameplate growth of each resource type in a given year for circuits 303 and 783. Nameplate growth will have varying impacts on circuit peaks (e.g., depending on load / consumption profiles).

DER Nameplate (kW) Forecast for circuits 303/783										
	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
303										
EE Com	45	32	39	31	41	45	54	53	48	50
EE Res	111	143	124	122	117	118	113	121	134	127
Solar	0	40	40	60	100	120	120	140	140	140
EV	3	13	22	26	29	26	22	16	13	13
783										
EE Com	49	35	42	34	44	49	58	57	52	54
EE Res	144	185	161	158	152	153	146	156	173	164
Solar	180	260	280	260	200	160	100	80	60	40
EV	32	32	54	51	42	29	22	16	10	10

Minimum Circuit Requirements and online dates

Deferral Period Window:

- Everyday from June through October, Mon through Sun
- Quantities shown are in MW and hours shown are 'hour beginning'
- These are minimum requirements, and do not reflect full value equivalency to traditional distribution projects. As such, alternatives should consider providing commitments above these minimums. For example, an equivalent traditional distribution project would provide ~10 MW and 99.976% availability year round.

▶ Critical Dates: Online by February 1, 2020 for full testing

Circuit 303

Hour	2020	2021	2022	2023	2024	2025	2026
1:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19:00	0.91	0.97	1.02	1.12	1.21	1.31	1.41
20:00	0.79	0.85	0.91	1.00	1.10	1.20	1.30
21:00	0.24	0.30	0.36	0.46	0.56	0.67	0.77
22:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Circuit 783

Hour	2020	2021	2022	2023	2024	2025	2026
1:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15:00	0.00	0.00	0.00	0.00	0.00	0.00	0.02
16:00	0.00	0.00	0.00	0.00	0.00	0.16	0.51
17:00	0.00	0.00	0.00	0.03	0.34	0.66	0.96
18:00	0.00	0.09	0.38	0.67	0.97	1.26	1.54
19:00	0.91	1.21	1.50	1.81	2.11	2.42	2.71
20:00	0.85	1.15	1.45	1.76	2.07	2.37	2.67
21:00	0.00	0.22	0.53	0.86	1.17	1.50	1.80
22:00	0.00	0.00	0.00	0.00	0.00	0.10	0.41
23:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0:00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



RFO Eligibility Requirements - Incrementality

- Not already sourced through another channel / fully incremental: these resources are fully incremental / fully conforming
 - Examples: New programs / EE technology not in SDG&E's portfolio
- Fully sourced through another channel / non-conforming
 - Examples: NEM/rooftop solar not providing new/different services. SGIP funded resources not providing new/different services. Programs / technologies / approaches largely identical to existing DR or EE programs
- Partially sourced through another channel / partially incremental
 - Portion not sourced under another channel may be deemed incremental

RFO Eligibility, continued

- SDG&E requires that third party-owned and operated facilities or programs will be operated and maintained in accordance with good industry practices, and all applicable requirements of law, the CAISO, NERC and WECC related to the project including those that are related to safety.
- Respondent will own and operate the facility(ies) associated with the offer and be responsible for development, land acquisition, fuel supply source and transportation, permitting, financing and construction for the facility(ies)
- For projects that require interconnection, SDG&E will accept either a Wholesale Distribution Access Tariff (“WDAT”) or a Rule 21 interconnection.
- ASC 810 (FIN46) Requirements: SDG&E will require access to financial records and personnel to determine if consolidated financial reporting is required.

RFO Product Type Eligibility

- All products must have the ability to deliver the required capacity every day during the deferral period (June through October only); however, SDG&E may elect to not call on the resource every day (for those resources that are dispatchable).
- EE and DR programs must submit a comprehensive M&V plan and description of their customer programs.
- Renewables, Energy storage, and DG must show reasonable progress towards developing their project so that SDG&E can have confidence the project is viable (including permits, site control, interconnection, etc.).
- Energy Storage must meet the energy storage definition included in PUC Code 2835
- The DRP Guidance Ruling defines three categories of natural gas fired facilities (fuel cells, Combined Heat & Power (“CHP”) and stationary internal combustion engines) as eligible DERs if these resources can show that they are able to “produce greenhouse gas (“GHG”) emissions reductions over its lifecycle.”

Overview of Bidding Protocol

Evan Bierman
Principal Origination Analyst

RFO Offer Requirements

- Respondents are required to submit the forms from the RFO Website (<https://www.sdge.com/2018IDERRFO>), and additional required documents as applicable, via PowerAdvocate®.
- Offers may include multiple resource types for each circuit, however minimum distribution capacity and locational requirements must be achieved in aggregate for the resources included.
- Projects must be integrated. SDG&E will contract with one counterparty, one performance guarantee, one set of defaults, etc. for each circuit. SDG&E will not sign one contract with company X for a solar facilities and totally separate/unlinked contract with company Y for an energy storage facility both on one circuit (SDG&E does not consider such a situation as an ‘integrated project’ for these purposes).
- Respondents must fill out separate offer forms for each offer variation.

RFO Offer Documents Required

1. Offer Form – Respondents may provide offers for one or both circuits described herein. Respondents should structure their offer and pricing such that SDG&E may choose to contract for deliveries on one or both circuits. If a Respondent is providing an offer for multiple product types (e.g. renewables and energy storage), the offer form should be completed with sufficient comments provided in the narrative spaces provided to allow SDG&E to understand the nature of the offer.
2. Redline of Term Sheet – Respondents may redline the Term Sheet.
3. Credit Application (optional) – The Respondent should complete, execute and submit the RFO credit application as part of its offer. The application requests financial and other relevant information needed to demonstrate creditworthiness. If audited financial statements are not available then unsecured credit will not be granted and collateral will be required as described in Section 12.
4. Electric Interconnection Information (as applicable) – For offers that require an electrical interconnection, Respondents may provide an electronic copy of the proposed project’s completed CAISO/WDAT or Rule 21 Interconnection Study.

RFO Offer Documents Required

5. Resource Report (as applicable) – Respondents that are providing renewable resources for valuation must submit a verifiable fuel resource plan (“solar resource” or “wind resource” etc.) for the duration of the contract based on historical actuals taken at the site with equipment maintenance and cleaning records, correlated to long term satellite data, with probabilities of different weather and productions scenarios for the site, range of equipment outputs, range of plant downtime and curtailments. For wind bids, you must submit the full AWS/GLGH or similar wind resource report.
6. Solar Production Report (as applicable) - For Solar resources, the full PVSyst file must be submitted by exporting the entire project that contains the prj, met, inv, pan, etc. files and submitting that file through PowerAdvocate. The contract DC must match the PVSyst file and the output of the file must match the 8760 in the Offer Form. All future discussions about plant production will refer to this prj file, where this future prj file will govern. No changes to plant design that changes the PVSyst model will be allowed unless written approval is given by SDG&E. The model should include all losses to the delivery point.
7. Measurement & Verification (M&V) plan (as applicable) – DR, EE, and BTM generation offers must provide a proposed M&V plan including a description of the calculation methodology.
8. Workpaper(s) Associated with the Energy Savings per EE unit (as applicable) – or EE valuation, Respondents must provide workpaper(s) showing the energy savings associated with each proposed measure including MWh reduction per EE unit and the unit’s load profile. The workpapers must include details of the energy savings calculations. There is not a ‘standard’ workpaper, and Respondents may provide any excel file(s) necessary to allow SDG&E to understand the calculations included in the offer and may reference the DEER database of EE resources.

*The Offer Form must be in Excel format (not in PDF) and must not be modified, except where directed. The Credit Application and redlines to the Term Sheet must be in Word format (not in PDF).



Offer Submission Process (Power Advocate)

Evan Bierman
Principal Origination Analyst

Websites and Offer Form Walk Through

- RFO website is <https://www.sdge.com/2018IDERRFO>
- Offers must be submitted through PowerAdvocate.com
- **Ways to Register:**
 1. Receive an invitational email from SDG&E followed by a link to access PowerAdvocate®
 2. Register as a first-time user on www.PowerAdvocate.com
 - Request for access using the Referral Information: 70556 SDG&E IDER RFO
 3. Request for access using the PowerAdvocate® link provided in the RFO documents
 - <https://www.poweradvocate.com/pR.do?okey=70556&pubEvent=true>

Common Mistakes to avoid

1. Missing documents

- Any of the required documents that are not submitted before the RFO closing date could be declared non-conforming

2. Modifying the Offer Form File

- If the bid has multiple options for pricing/COD/deliveries/etc., fill out separate offer forms for each option. Adding worksheets, or renaming worksheets, create problems with interpretation and processing, and the bid may be declared non-conforming and rejected

3. Common Typos

- Make sure that the Project Information form describes the technology as “Solar PV” if it is solar photovoltaics, “Wind “ if the project is wind, etc. For projects that are a combination of technologies, enter “Hybrid”
- Offer form entries that are inconsistent with the units shown at the top of the pricing form column may be evaluated as is. For example: \$/MWh vs. cents/kWh
- Prices and deliveries should start at the same date as the contract start date. Deliveries and prices should stop in the final contract year. Offer forms for contracts of 10 year terms that only have 7 years of pricing and deliveries, or any other mismatch that is not explained in the offer form, may be declared non-conforming and rejected

4. Making the utility fill out your bid form

- Creating ambiguities in a pricing form that forces the utility to “fill out” critical sections, either as additions or corrections, is not only a time-consuming process that can lead to inaccuracies, but can also be construed as special treatment of bidders, creating conflict of interest and jeopardizing the integrity of the RFO process

RFO Evaluation Overview

Offer Evaluation – Quantitative Considerations

- SDG&E is procuring firm distribution capacity only. Attributes beyond distribution capacity will receive qualitative consideration; however, SDG&E intends to only procure (and therefore pay for) distribution capacity.
- An offers' value to customers is calculated by comparing the NPV of the capacity costs in the offer to the NPV of the distribution capacity deferral, less RFO administrative costs.
- The distribution capacity deferral value is determined by calculating the difference between SDG&E's revenue requirement for the 'status quo' distribution upgrade (or build out) and the deferred distribution upgrade revenue requirement. The deferral period is based on the offer's contract term, but in no case, will extend beyond 2026.
- Therefore, distribution capacity deferral value for all product types will be the same and evaluation of products will be technology neutral.
- Excess distribution capacity offered in addition to the minimum circuit requirements will not affect the fixed cost-effectiveness cap. Excess distribution capacity will be evaluated in a qualitative manner.
- For resources that require grid interconnection, upgrade costs that solely benefit the project and that are paid for by the Respondent (Gen-tie Costs) should be reflected in the offer pricing, and reimbursable network upgrade costs that benefit the grid broadly and are ultimately borne by all customers will be considered in the quantitative evaluation of the offer (Network Upgrade Costs).

Offer Evaluation – Qualitative Considerations

- Qualitative factors and benefits will be used to determine which projects are the “Best Fit” for SDG&E’s customers. SDG&E may use these factors to determine advancement onto the short list
 - A. Project Viability (including timing, excess capacity offered, etc.)
 - B. Adherence to Term Sheet Terms and Conditions
 - C. Supplier Diversity
 - D. Load Order Ranking
 - E. Voltage and other power quality services
 - F. Equipment Life Extension
 - G. Societal Net Benefits
 - H. Portfolio Fit
 - I. Other factors may include, but are not be limited to, counterparty concentration, site diversity, technology / end-use diversity, market transformation and if the resource can help SDG&E achieve multiple mandates.

10 Minute Break
(time permitting)

Term Sheet / Pro Forma Overview

Ted Roberts
Origination Manager

SDG&E Distribution Capacity Solicitation Term Sheet

Term sheet is for discussion purposes only

1.	Project	<i>[Seller to insert description of the specific distributed energy resource or combination of integrated distributed energy resources, including all generation intertie facilities.]</i>
2.	Transaction	<i>[counterparty name]</i> (“Seller”) shall sell and deliver, and SDG&E shall purchase and receive, the Product at the Contract Capacity, as listed in Section 4 below, from the Project. Seller may sell other products, including Product in excess of the Contract Capacity, to third parties or into the applicable market. Seller shall receive and retain any revenues from the sale of other products.
3.	Product	The Project’s ability to provide distribution level capacity by decreasing net load through [decreasing electrical consumption] or [increasing generation], to [insert purpose, i.e. reduce thermal load].
4.	Contract Capacity	Distribution capacity: <i>[X]</i> MW <i>[Seller to designate, at a minimum, an amount equal to the requirements in Appendix B of the RFO]</i>
5.	Contract Price	Capacity Rate: <i>[\$X]/month [Seller to designate]</i>
6.	Operating Restrictions:	The Operating Restrictions are <i>[Seller to designate]</i>
7.	Scheduling/Dispatch	<i>[Seller to insert any limits on scheduling and dispatch (e.g. energy efficiency projects are not dispatched or any limitations on dispatch)]</i>



SDG&E Distribution Capacity Solicitation Term Sheet

8.	Communications Systems and Equipment	<p>Seller shall install communications systems and equipment for the Project to enable Buyer to remotely monitor the status of the Project at all times during the Delivery Term on an aggregate and individual unit basis, and which permits Buyer to have real time information access to the operations of the Project, including the ability to measure the real-time load decrease and/or increase of the Product.</p> <p>During the Delivery Term, Buyer may implement Grid and Distributed Energy Resource Management Systems (“GDERMS”), allowing greater access to real-time monitoring of Distributed Energy Resources (DER), consistent with interconnection facilities requirements. If GDERMS is implemented, Seller agrees to implement new or upgraded equipment to the Project to allow for such DER monitoring.</p>
9.	Performance Guarantees	<p><i>Performance Guarantees: [Seller to insert performance guarantees, such as liquidated damages for failing to meet a dispatch or minimum monthly capacity.]</i></p>
10.	Operational Control	<p>Notwithstanding Seller’s obligations to deliver the Product, Seller will have operational control of the Project and be responsible for operation and maintenance of the Project. Buyer will not bear any costs related to ownership, operation, scheduling, dispatch, or maintenance of the Project.</p>



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11.	Project Site and Customers	<p>Seller shall execute all necessary forms, documentation, and agreements in order to secure all Sites and/or Customers (as applicable) necessary to deliver Product to Buyer. The terms and conditions of the agreements Seller has for the Site and/or with Customers are independent of Buyer, and Buyer shall not have any responsibility or incur any liability pursuant to such agreements.</p> <p><i>[INSERT customer requirements (i.e. updates to customers signed up for EE program each month)]</i></p>
12.	Interconnection	<p>The Project is interconnected to circuits or loads or associated with load facilities that are electrically interconnected to circuits 303 and 783 in the area of Carlsbad, California, identified in the RFO Protocol. <i>[Seller to insert specific description of proposed interconnection arrangement]</i></p> <p>Seller shall be responsible for all delays, costs and expenses associated with such interconnection.</p>
13.	Initial Delivery Date (IDD)	<p><i>[Seller to designate date defined in the RFO Protocol]</i></p> <p>Failure to meet the Initial Delivery Date will be an Event of Default.</p>
14.	Delivery Term/Available Periods	<p>The Delivery Term will be <i>[XX] [Seller to designate 5 to 10]</i> years from the Initial Delivery Date.</p> <p>Available Periods for dispatch/operation (which shall be the Minimum Availability required of the Project):</p> <ul style="list-style-type: none"> • <u>Deferral Period Windows</u>: the project shall be available as set forth annually in Appendix B of the RFO Protocol.



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15.	Critical Milestones	<p>Seller shall cause the development and construction of the Project to meet each of the following (“Critical Milestones”) by the date set forth: <i>[Seller to designate milestone dates]</i></p> <ul style="list-style-type: none">i. Filing application for Required Permits: <i>[Insert Date]</i>ii. Major equipment ordered: <i>[Insert Date]</i>iii. <i>[DR/EE: 50% of Customer acquisitions: [Insert Date]]</i>iv. <i>[DR/EE: 75% of Customer acquisitions: [Insert Date]]</i>v. <i>[DR/EE: 100% of Customer acquisitions: [Insert Date]]</i>vi. Obtain site control: <i>[Insert Date]</i>vii. Execution of interconnection agreement: <i>[Insert Date]</i>viii. Construction start: <i>[Insert Date]</i>ix. Completion of Interconnection Facilities: <i>[Insert Date]</i>x. Initial Performance Test: <i>[Date that is [X] months prior to IDD.]</i>xi. <i>[Other Critical Milestones to be inserted, as necessary, based on the specific distributed energy resource(s)]</i>
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16.	Compensation/ Payments	Buyer shall pay to Seller a monthly payment for the Product: <i>[Insert payment based on available capacity requirement]</i>
17.	Measurement and Verification	<p>The amount of Product the Project delivers will be measured based on the Project's technology, and will include for:</p> <ul style="list-style-type: none"> • <u>Energy storage</u>: revenue-quality interval meter • <u>Demand response</u>: Parties' agreed-upon baseline methodologies that incorporates metering against a baseline <i>[Seller to insert measurement and verification proposal]</i>; • <u>Distributed generation</u>: revenue-quality interval meter for generation, agreed upon forecast methodology for curtailable generation; or • <u>Energy efficiency or permanent load shift</u>: Parties' agreed upon methodology that incorporates metering against a baseline
18.	Performance Testing	<p>The Parties will develop test procedures, testing dates and parameters for the Critical Milestone schedule (Performance Test).</p> <p>Prior to the Initial Delivery Date, Seller will perform an Initial Performance Test to demonstrate to Buyer that the Project is capable of delivering Product at the Contract Capacity. The Initial Performance Test may need to take into account (1) that such Initial Performance Test is occurring outside a Delivery Month and (2) the Project's ability to test alignment with the Operating Parameters given the timing and duration of the Initial Performance Test. The Initial Delivery Date will occur if Seller reliably demonstrates the Project's delivery of Product at 100% of the Contract Capacity.</p>



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19.	Seller Performance Assurance	<p>Seller shall deliver to Buyer and maintain Performance Assurance in a form acceptable to Buyer to secure its obligations under the agreement, as follows:</p> <ul style="list-style-type: none"> i. Project Development Security. Seller shall post Project Development Security in the form of cash or letter of credit, equal to [\$[See RFO]. ii. Construction Period Security. Seller shall post Construction Period Security in the form of cash or letter of credit equal to [\$[See RFO] until the Delivery Term Security is due. iii. Prior to IDD, Seller shall post Delivery Term Security in the form of cash or letter of credit, in an amount equal to [\$[See RFO] until all amounts are indefeasibly paid in full. Seller may apply the Project Development Security toward the Delivery Term Security.
20.	Events of Default	<ul style="list-style-type: none"> i. Failure to meet a Critical Milestone; ii. Failure to meet Initial Delivery Date; iii. Failure to meet the Minimum Availability in Section 14 of this Term Sheet; iv. Results of a Performance Test show that the Project provides Product at less than 99% of the Contract Capacity; v. Failure to meet reliability guarantee (e.g. customer load dropping immediately if generating resource is unavailable); vi. Failure to timely provide or maintain appropriate Performance Assurance; or vii. <i>[Other events of default to be inserted, as necessary, based on the specific distributed energy resource(s)]</i>



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21.	Force Majeure	<i>[Seller to insert aggregate FM delays before termination during construction and delivery term.]</i>
22.	Termination Payment	Settlement Amount to Non-Defaulting Party.
23.	Safety	Seller will be required to meet certain safety standards with respect to the Project. Seller's safety obligations will reflect the agreement and Project structure, technology, and Product along with Seller's commercial relationship with the Site(s) and Customers.
24.	CPUC Approval	<p>If CPUC Approval has not occurred on or before [XXX] [Seller to insert] days from the date on which Buyer files the agreement with the CPUC seeking CPUC Approval, then either Party may terminate the agreement.</p> <p>"CPUC Approval" means a final and non-appealable order of the CPUC, without conditions or modifications unacceptable to either of the Parties, pursuant to which the CPUC approves of this agreement and any requested relief in its entirety.</p>
25.	Conditions Precedent	<i>[Seller to insert, including financing, permits, and network upgrade costs for interconnection exceeding [INSERT CAP]].</i>



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26.	Confidentiality	Customary provisions
27.	Dispute Resolution	Binding Arbitration
28.	Governing Law/Venue	California/Exclusively in the Court located in the County of San Diego, California
29.	Insurance	<i>[Seller to insert proposed customary and non-customary insurance solutions Seller deems appropriate based on the Product being bid]</i>

Risk Management

Mason Withers
Quantitative Risk & Controls Manager

Big picture

- Determine risk of project
- SDGE reliability
- Fire Safety

Risk

- Electricity service reliability
 - Value of Service
 - Claim
- Equipment Damage
- Fire Safety

Rationale and Methodology

SDG&E's rationale and methodology for calculating the credit requirements is as follows:

1. SDG&E will evaluate individual bids' causes and effects on different scenarios such as (but not limited to) wildfires, damage to the grid, damage to surrounding equipment, damages caused by outages, bankruptcy, construction schedule, construction related risks, bid cost vs. replacement services, expedited installment of a traditional solution, temporary additional solutions to maintain reliability, SDG&E's exposure to a given supplier, price, term, etc.
2. SDG&E will then use industry standard practices to create a risk-weighted security requirement.
3. SDG&E will then apply the individual bidder's credit rate to calculate an implied credit adder to the individual bid, which will then be added to the bid cost to get a total cost to SDG&E customers.

Wholesale Distribution Open Access Tariff (WDAT) and Rule 21 Generator Interconnection Processes

Michael Turner | Customer Generation

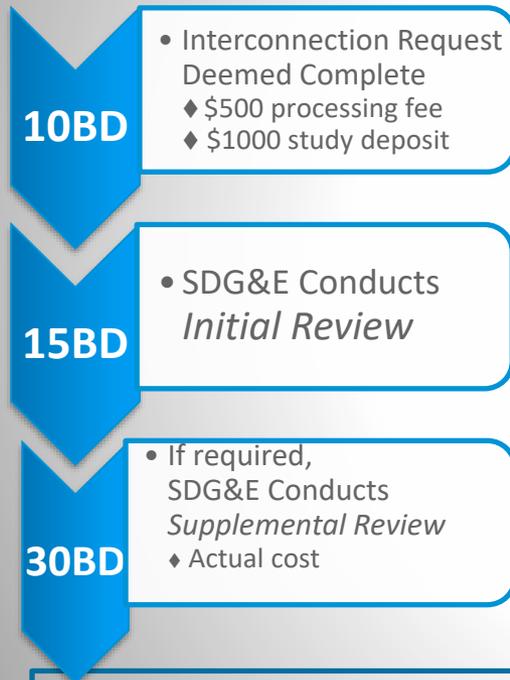
Safety

- Safety is a core value at SDG&E.
- The generator interconnection studies are intended to ensure no adverse impacts to the safety and reliability of the electric grid.
- Generator interconnection customers are expected to comply with all applicable federal, state, and local laws, ordinances and regulations, and to ensure the safety of their employees, SDG&E employees, and the public.

WDAT Flow Charts & Timing

Fast Track

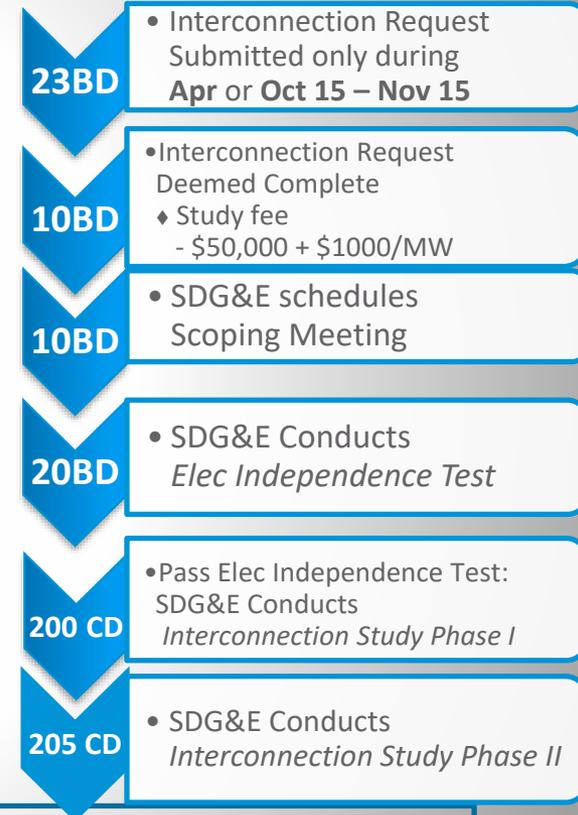
2 MW or less: any location
 3 MW or less: 2.5 mi from sub and feeder conductor



Independent Study Process (Energy only)



Cluster Study Process (Energy only)



Interconnection Agreement



W DAT Application Form and Location

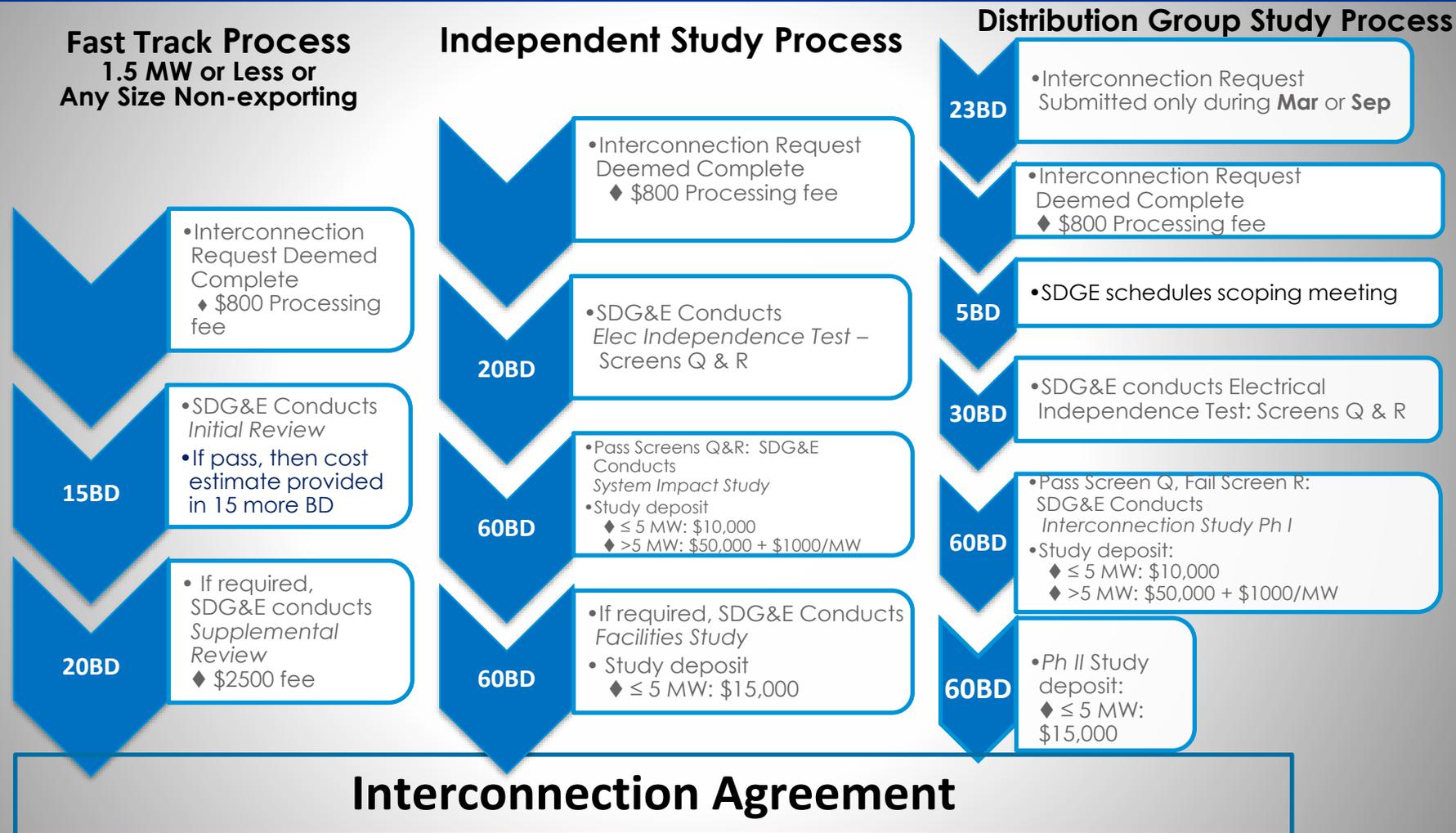
W DAT Application Location - <http://sdge.com/wdat>
[Interconnection Request in Appendix 1 is on pages 329-345](#)

W DAT Interconnection Package submitted to:
W DATSGIPAPPLICATIONS@semprautilities.com

Or mail hardcopy application package to:
Customer Generation - CP52F
San Diego Gas & Electric
8316 Century Park Court
San Diego, CA 92123-1582

Instructions will be provided where to
send application fee

Rule 21 Study Process Timelines



Rule 21 Application Form and Location

Rule 21 Application Location:

http://regarchive.sdge.com/tm2/pdf/ELEC_ELEC-SF_142-05203.pdf

Rule 21 Interconnection Package can be submitted to:

DGAPPLICATIONS@semprautilities.com

Or mail hardcopy application package to:

Customer Generation - CP52F

San Diego Gas & Electric

8316 Century Park Court

San Diego, CA 92123-1582

Instructions will be provided where to send application fee



SDG&E Distribution Interconnection Process

Additional Resources available at www.sdge.com

Go to: CUSTOMER GENERATION in lower right corner

- Pre-Application Report (\$300)
- SDG&E WDAT and Rule 21 Interconnection Queue
- WDAT tariff
- Rule 21 tariff
- Interconnection Interactive Map (shows line capacity and available capacity after existing and queued generators)
- Generator Interconnection Handbook

SDG&E Distribution Interconnection Process

Questions:

Ken Parks - Customer Generation Manager

kparks@semprautilities.com

858-636-5581

Mike Turner - Principal Engineer

mturner@semprautilities.com

858-654-8326

General Q&A Session

***Please submit your questions by
February 2, 2018***

to

IDERIncentivePilotRFO@semprautilities.com

Please cc the IE at:

Barbara Sands – Barbara.Sands@PAConsulting.com

SDG&E DER Monitoring, Control & Communications Working Session

DER Monitoring and Control

- Monitoring and control will be dependent on specific resources and locations, and are subject to the associated interconnection processes and requirements (eg. Rule 21).
- SDG&E requires the ability to in real time remotely monitor each individual resource.
- SDG&E requires the ability to remotely disconnect each individual resource.
- SDG&E reserves the right to require for aggregations that the provider supply a single interface for all resources.
- SDG&E will require Respondents to provide an appropriate points list, where applicable, for their resource(s) upon shortlisting.
- SDG&E requires the ability to schedule a resource day-ahead up to the required capacity.
- Additional capabilities, such as variable VAR output or other forms of control may be qualitatively evaluated per the RFO protocols Section 4.

DER Communication

- Communication types will be dependent on specific resources and locations, and are subject to the associated interconnection processes and requirements (e.g. Rule 21).
- Communication is typically via private cloud or infrastructure. Respondent will supply their proposed communication means upon shortlisting. SDG&E reserves the right to approve the means of communication.

Example Points List for Energy Storage Asset

Operational Mode	Setpoint Description	Point Name	Units	Notes
System AO Control Points				
General	Heartbeat from Gateway Being Sent to Asset	HEART_BEAT_OUT	-	
General	Start Signal sent to Asset	START_OUT		
General	Stop Signal Sent to Asset	STOP_OUT		
General	Real Power Mode of Operation Being Sent to Asset	P_MODE_OUT	-	-
	1: Standby (AC Breaker Closed, No Other Mode Selected)			
	2: Base Mode			
	3: Frequency Regulation			
	4: Real Power Load Shifting			
	5: Real Power Load Smoothing			
	6: Target SOC			
7: VSI VF (indicates Voltage and Freq. set by asset, no other operational modes possible at this time)				
General	Reactive Power Mode of Operation Being Sent to Asset	Q_MODE_OUT	-	-
	1: Standby (AC Breaker Closed, No Other Mode Selected)			
	2: Base Mode			
	3: Voltage Regulation			
	4: Reactive Power Load Shifting			
	5: Reactive Power Load Smoothing			
6: VSI VF (indicates Voltage and Freq. set by asset, no other operational modes possible at this time)				
CSI/VSI	Voltage Source Mode Selection (0 = CSI, 1= VSI) Being Sent to Asset	VSI_MODE_OUT	-	-
Base P Mode	Real Power Setpoint Being Sent to Asset	BASE_KW_OUT	KW	-
Frequency Regulation	Frequency Regulation Frequency Setpoint Being Sent to Asset	FREQ_REG_HZ_OUT	Hz	-
Frequency Regulation	Frequency Regulation Frequency Deadband (+/-) Being Sent to Asset	FREQ_REG_DB_HZ_OUT	Hz	-
Frequency Regulation	Frequency Regulation SOC Upper Limit (UL) Being Sent to Asset	FREQ_REG_SOC_UL_OUT	%	Stop operation above this
Frequency Regulation	Frequency Regulation SOC Lower Limit (LL) Being Sent to Asset	FREQ_REG_SOC_LL_OUT	%	Stop operation below this
Frequency Regulation	Frequency Regulation Reference Signal at PCC Being Sent to Asset	FREQ_REG_REF_SIG_OUT	Hz	-



This is for illustrative purposes only

Example Points List Continued

Operational Mode	Setpoint Description	Point Name	Units	Notes
System AO Control Points				
Real Power Load Shifting	Load Shifting Real Power Upper Limit (UL) Being Sent to Asset	LD_SHFT_UL_KW_OUT	KW	Discharge above this limit
Real Power Load Shifting	Load Shifting Real Power Lower Limit (LL) Being Sent to Asset	LD_SHFT_LL_KW_OUT	KW	Charge below this limit
Real Power Load Shifting	Load Shifting SOC Upper Limit (UL) Being Sent to Asset	LD_SHFT_SOC_UL_OUT	%	Stop operation above this
Real Power Load Shifting	Load Shifting SOC Lower Limit (LL) Being Sent to Asset	LD_SHFT_SOC_LL_OUT	%	Stop operation below this
Real Power Load Shifting	Load Shifting Reference Signal Being Sent to Asset	LD_SHFT_REF_SIG_OUT	KW	-
Real Power Load Smoothing	Load Smoothing Real Power Ramp Rate (+/-) Limit Being Sent to Asset	LD_SMTH_RAMP_RATE_OUT	KW/Min	(Dis)charge outside this limit
Real Power Load Smoothing	Load Smoothing SOC Upper Limit (UL) Being Sent to Asset	LD_SMTH_SOC_UL_OUT	%	Stop operation above this
Real Power Load Smoothing	Load Smoothing SOC Lower Limit (LL) Being Sent to Asset	LD_SMTH_SOC_LL_OUT	%	Stop operation below this
Real Power Load Smoothing	Load Smoothing Real Power Reference Signal Being Sent to Asset	LD_SMTH_REF_SIG_OUT	KW	-
Target SOC	Target SOC Setpoint Being Sent to Asset	TRGT_SOC_OUT	%	-
Target SOC	Target SOC Deadband (+/-) Being Sent to Asset	TRGT_SOC_DB_OUT	%	-
Target SOC	Target SOC Real Power Limit Being Sent to Asset	TRGT_SOC_KW_OUT	KW	-
Base Q Mode	Reactive Power Setpoint Being Sent to Asset	BASE_KVAR_OUT	KVAR	-
Voltage Regulation	Voltage Regulation Voltage Setpoint Being Sent to Asset	VOLT_REG_VOLT_OUT	V	-
Voltage Regulation	Voltage Regulation Voltage Deadband (+/-) Being Sent to Asset	VOLT_REG_DB_OUT	%	-
Voltage Regulation	Voltage Regulation Reference Signal at PCC Being Sent to Asset	VOLT_REG_REF_SIG_OUT	V	-
Reactive Power Load Shifting	Reactive Power Load Shifting Upper Limit (UL) Being Sent to Asset	RLD_SHFT_UL_KVAR_OUT	KVAR	Source VARs above this limit
Reactive Power Load Shifting	Reactive Power Load Shifting Lower Limit (LL) Being Sent to Asset	RLD_SHFT_LL_KVAR_OUT	KVAR	Sink VARs below this limit
Reactive Power Load Shifting	Reactive Power Load Shifting Reference Signal Being Sent to Asset	RLD_SHFT_REF_SIG_OUT	KVAR	-
Reactive Power Load Smoothing	Load Smoothing Reactive Power Ramp Rate (+/-) Limit Being Sent to Asset	RLD_SMTH_RAMP_RATE_OUT	KVAR/Min	-
Reactive Power Load Smoothing	Load Smoothing Reactive Power Reference Signal Being Sent to Asset	RLD_SMTH_REF_SIG_OUT	KVAR	-
VF Controller/Island Mode	Voltage Source (VSI VF) Voltage Setpoint Being Sent to Asset	VOLT_VSI_VF_OUT	V	-
VF Controller/Island Mode	Voltage Source (VSI VF) Frequency Setpoint Being Sent to Asset	HZ_VSI_VF_OUT	Hz	-