

# Welcome to the SDG&E June 2014 Request for Offers Renewable Auction Mechanism V (RAM)



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# June 2014 Request for Offers Renewable Auction Mechanism V (RAM) Bidder's Conference

*June 6, 2014 | 1pm to 5pm*

*Hosted by Web Event Services*

*Dial-in: (866) 219-5260*

*Conference ID number is: 1639206*

# Conference Outline

- 1. Agenda Review and Legal Disclaimer** Fernando Valero | Energy Contracts Originator  
1:00pm - 1:10pm
  - 2. SDG&E and Supplier Diversity** Brad Mantz | Energy Contract Originator & E&FP  
1:10pm - 1:15pm  
Diversity Champion
  - 3. RFO Goal, Scope, Evaluation & Process** Fernando Valero | Energy Contracts Originator  
1:15pm - 2:30pm  
Barbara Sands | Independent Evaluator  
Leilan Johnson | Origination Analyst  
Maria Boldyreva | Procurement Advisor
  - 4. RAM PPA + Q&A Session** Maria Boldyreva | Procurement Advisor  
2:30pm - 3:30pm  
Fernando Valero | Energy Contracts Originator
  - 5. Transmission & Interconnection + Q&A Session** Bruno Velosa | Generation Interconnection Team Lead  
3:30pm - 5:00 pm  
Ken Parks | Customer Generation Manager
- 2013 CAISO Generator Interconnection  
WDAT Generation Interconnection Process

## Legal Disclaimers: Anti-Trust Guidelines & Document Conflict

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### 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 June 2014 RAM V RFO Materials. To the extent that there are any inconsistencies between the information provided in this presentation and the requirements in the RFO Materials, the RFO Materials shall govern*

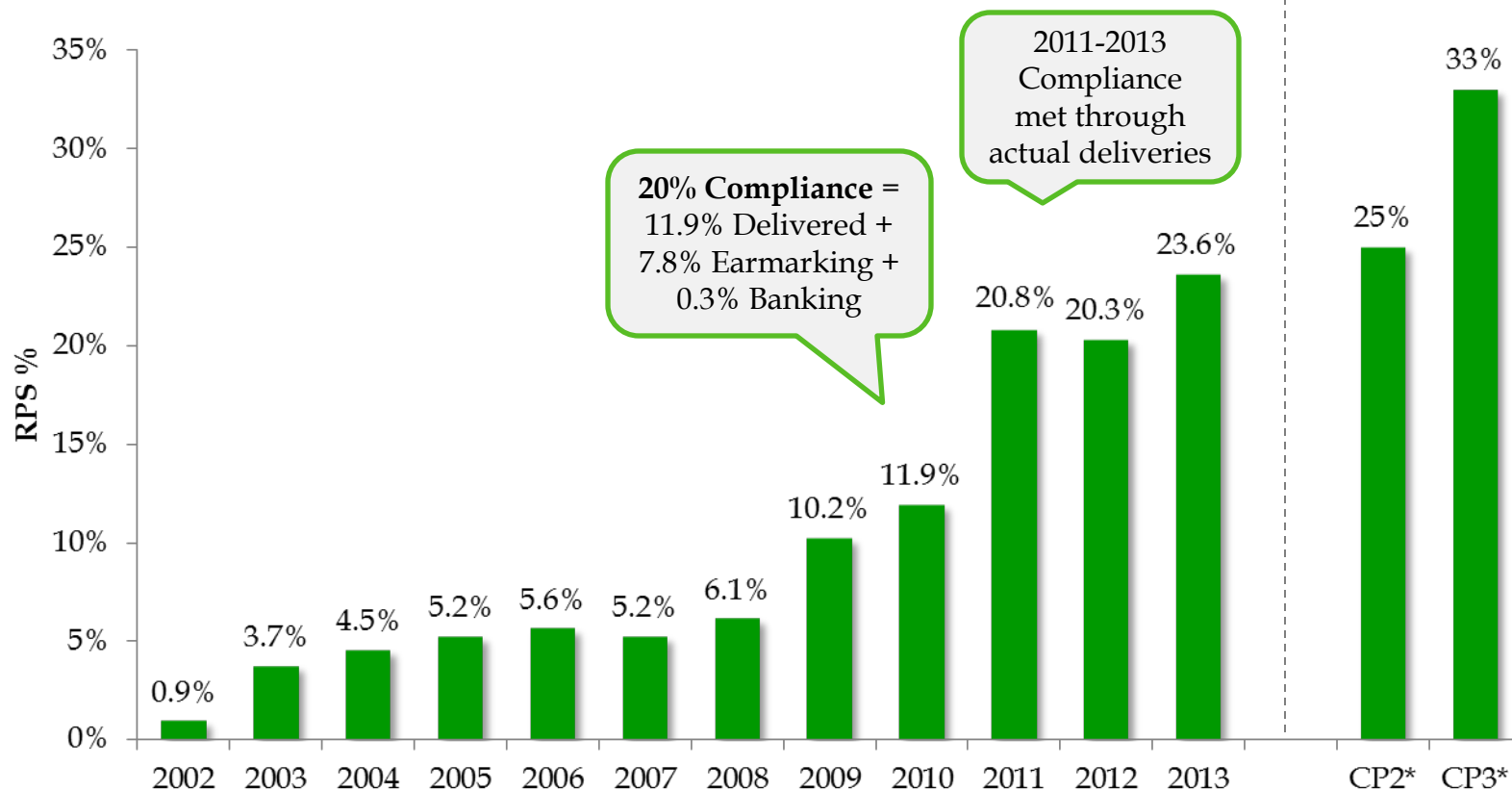
# Welcome & Context

# Welcome & SDG&E Values in the Context of the Fifth RAM RFO

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- This is the fifth auction-style RFO issued by SDG&E, and the 16th RFO with a renewables component that SDG&E has launched since 2003. We are committed to the State's RPS goals and to continue to be compliant with RPS regulations.
- SDG&E worked together with the CPUC and other IOUs to develop a successful auction process. We have tried to incorporate lessons learned from the four prior RAM RFOs and will continue to watch closely and learn from these solicitations.
- Assessment and selection transparency is paramount to us. Our Independent Evaluator, Barbara Sands, will be involved in every step of the process.

# Our Journey and RPS Goals



\* Percentages indicate RPS Compliance Requirement

SDG&E continues to grow its renewable energy portfolio in order to meet the state requirements of 25% by 2016, and 33% by 2020. SDG&E anticipates meeting its 25% state requirement goal by 2016.

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## SDG&E and Supplier Diversity

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



# Background on Diverse Business Enterprises (DBE) Program

## *General Order (GO) 156*

- Adopted by the California Public Utilities Commission in 1986
- Promote greater competition among utility suppliers by expanding the available supplier base and to encourage greater economic opportunity for women, minority, and disabled veteran owned businesses historically left out of utility procurement
- In 2012 Electric Procurement was added to GO 156 reporting

## *Currently at SDG&E*

- “Advancing supplier diversity is more than just a priority for San Diego Gas & Electric® (SDG&E®); it’s become part of our company’s DNA.” – *Jessie Knight, CEO, SDG&E*
- Supplier diversity goals are part of every executives’ department goals and are a component of every employee’s compensation goals
- **44.9%** of SDG&E’s goods and services procurement dollars were spent with DBEs in 2013
- **43.7%** of our gas procurement dollars going to DBEs in 2013

# GO156 Electric Procurement Reporting Progression

- **Year 2011** - All California IOUs were required to begin separate reporting on electric procurement spending (similar to gas procurement)
- **Year 2012** - SDG&E was the first California IOU to:
  - Contract long-term power purchase agreements in of renewable energy with DBE
  - Complete electric market wholesale transactions with DBEs

## **Year 2013 to date** (Reference Section 1.E)

- SDG&E encourages Diverse Business Enterprises (“DBEs”), as defined in G.O. 156, to participate in the RAM program and in this RFO.
- SDG&E encourages developers to utilize DBEs during various stages of project development and construction. As a part of G.O. 156, SDG&E will require developers to identify and verify their DBE contractors/subcontractor spending, if any.
- Like other qualitative factors, in the event of a tie between two offers, SDG&E will consider a Respondent’s status as a DBE and or a Respondent’s plan to utilize the services of DBEs during project development.

# Supplier Diversity Resources

*SDG&E Supplier Diversity Team (contact info is on slide 13)*

## *Websites*

- <http://www.sempra.com/about/supplier-diversity/>
- <http://www.cpuc.ca.gov/puc/supplierdiversity/>

## *Local SDG&E Power Supplier Advisory Panel (PSAP)*

- Panel of SDG&E executives and employees, developers, DBEs and bankers focused on identify potential barriers to the participation of eligible DBEs in the electric procurement market, and work with regulatory agencies and DBEs to remove those barriers

## *Statewide IOU Supplier Diversity Roundtable (SDR)*

- Representation of California IOUs executives and employees, developers, DBEs and bankers to promote and accelerate the entry of eligible DBEs into the electric procurement market in an open and transparent forum
- 3 Working Groups: Wholesale, RA and Subcontracting Indirect Spend

# Diverse Supplier Certification\*

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## Minority- or woman-owned company

- California Public Utilities Commission (CPUC) Supplier Clearinghouse (free)

## Service Disabled Veteran Business

- State of California, General Services Office of Small and Disabled Veteran Business (OSDC)

## NMSDC

- Regional affiliates of the National Minority Supplier Development Council (NMSDC)

## Others

- 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

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**Overview of Schedule,  
Products, Procurement Targets  
and Eligibility Requirements**

# RFO Schedule, aiming to complete PPAs by October 2014

June 2014

- RFO issued and SDG&E begins accepting bids: June 2, 2014
- Bidders Conference: June 6, 2014, web-conference
- Deadline to Submit Questions: June 13, 2014
- Deadline to Submit Offers: offer must be submitted electronically via PowerAdvocate® by 12 p.m. PST (**noon**) on June 27, 2014

September  
2014

- Notification to winning and contingent bidders on September 5, 2014
- Winning bidders' acceptance/withdrawal by September 12, 2014
- Notification to contingent bidders on September 16, 2014
- Contingent bidders' acceptance/withdrawal by September 23, 2014

Oct.-Dec.  
2014

- RAM PPA execution, October 17, 2014
- Appreciation letters to unsuccessful bidders sent by October 17, 2014
- SDG&E submits Tier 2 Advice Letter for CPUC approval of RAM PPAs, November 21, 2014 (proposed)
- Anticipated CPUC Approval (prior to any appeal and/or suspension), December 19, 2014

# RAM Capacity Targets: 71.9 MW of Small Scale Renewables

- SDG&E will seek a total of 71.9 MW of renewable generation from baseload, peaking and non-peaking products.

Product Type	SDG&E Target Capacity
Baseload (biomass/geothermal)	10.5 MW
Peaking (Solar)	58.4 MW
Non-Peaking (Wind)	3 MW
<b>Total</b>	<b>71.9 MW</b>

- SDG&E may procure +/- 20 MW of the capacity targeted in each product category so long as the total capacity procured in each auction is plus or minus 20 MW of the total capacity target.



# Summary of Products and Targets

Product	High-level Description	Target Capacity
Baseload	<ul style="list-style-type: none"><li>✓Technologies run continuously</li><li>✓ratio of off-peak to total annual deliveries between 43% and 53%</li></ul>	10.5 MW
Peaking	<ul style="list-style-type: none"><li>✓Peaking products</li><li>✓ratio of off-peak to total annual deliveries less than 43%</li></ul>	58.4 MW
Non-Peaking	<ul style="list-style-type: none"><li>✓Off-peak technologies</li><li>✓ratio of off-peak to total annual deliveries greater than 53%</li></ul>	3 MW

# Eligibility Requirements

## Resource:

1. Resources must be CEC-certifiable as an eligible renewable resource;
2. Resources must utilize a commercially proven technology;
3. Resources must be new or existing facilities;
  - a) an existing facility may participate in RAM without restriction if the existing facility is not currently delivering energy pursuant to an existing contractual agreement with SDG&E, PG&E or SCE, or if such an agreement exists but it is scheduled to terminate within 24 months of the utility's expected date of CPUC approval for the utility's PPA from that RAM auction, as estimated by that utility's RAM Bidding Protocol (expected CPUC approval date: December 19, 2014)
4. Resources must sell its entire output to SDG&E (full buy/sell) or all output in excess of onsite load to SDG&E (excess sales).
5. The project must not sell partial output from a system sized above 20 MW.

## Project Capacity:

1. All capacity ratings specified in this RFO must be nameplate capacities for **alternating current ("ac")** generation as provided to the bulk power transmission or distribution system. **Offers that provide direct current ("dc") ratings will be rejected for nonconformance.**
2. Resources must provide a minimum contract size of greater than 3 MW installed capacity

# Eligibility Requirements

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## Location/Site Control:

1. Project must be located within the service territories of SDG&E, PG&E or SCE
2. The Respondent must have, at time of bidding, full site control for the duration of the 10, 15 or 20-year power purchase agreement. Site control may be evidenced by documentation of:
  - a. direct ownership
  - b. a lease
  - c. an option to lease or purchase upon PPA approval. The option must be an exclusive option to the Bidder that will last until the completion of the RFO cycle.

Note: If shortlisted, Respondent's site control documents must be: 1) in the name of the same entity that will execute the RAM PPA, or 2) shall have been assigned to such entity by the time Respondent accepts its position on the shortlist.

# Eligibility Requirements

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## **Interconnection:**

1. Respondents must have completed a System Impact Study, a Phase I or Phase II interconnection study, or have passed WDAT or CAISO Fast Track screens; and provide
2. A copy of the most recent completed study or equivalent results from the Fast Track process must be included in the offer.
3. If the project is an existing facility, Respondent must provide the facility's interconnection agreement.

Note: If shortlisted, Respondent's interconnection documents must be: 1) in the name of the same entity that will execute the RAM PPA, or 2) shall have been assigned to such entity by the time Respondent accepts its position on the shortlist.

# Eligibility Requirements

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## Interconnection:

### 1. Deliverability Studies

- a. Winning FCDS bidders must obtain a **FINAL** CAISO deliverability study to determine whether upgrades are required for the project to be eligible to provide Resource Adequacy
- b. Must apply for the deliverability study as soon as possible (but not required as part of bid)
- c. Winning FCDS projects must achieve FCDS no later than **Jan. 1, 2025**.

# Eligibility Requirements

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## Developer Experience:

1. The Respondent and/or members of the project development team must have experience. Respondents must provide evidence of having completed, or begun construction, of a project using a technology similar to the offered technology, that is at least 1 MW installed capacity.
2. The Respondent will maintain contractual control of the facilities and be responsible for development, land acquisition, permitting, financing and construction for the facilities. Respondents must provide a description of how operational control will be maintained.

## Project Start Date:

Offers must provide an anticipated delivery start date that is **within 24 months after the expected CPUC RAM PPA Approval date.**

## Other Incentives Not Permitted:

Respondents shall not have sought Small Generator Incentive Program (SGIP) benefits, California Solar Incentives (CSI) or Net Energy Metering (NEM) Program benefits for the projects being offered and shall not plan to seek or participate in such programs for the entire term of the PPA.

# PPA Terms

Term	Description
Deadline for Commercial Operation	Must achieve Commercial Operation within 24 months of CPUC approval. One 6 month extension permitted for certain permitting or interconnection delays, or force majeure
Performance Assurance	<p>Minimum deliveries of:</p> <ul style="list-style-type: none"> <li>• 140% of expected annual net energy production based on two years of rolling production for as-available non-peaking projects.</li> <li>• 160% of expected annual net energy production based on two years of rolling production for as-available peaking projects.</li> <li>• 90% of expected annual net energy production based on one year of rolling production for baseload projects.</li> </ul> <p>Note: no minimum guaranteed energy performance requirement for small hydro</p>
Resource Adequacy/Full Capacity Deliverability Status	<p>Seller must apply for deliverability as soon as possible (but not required as part of bid) if bidder is selecting FCDS pricing. Seller must receive FINAL deliverability studies (e.g. Final Phase II deliverability studies)</p> <ul style="list-style-type: none"> <li>• Full capacity deliverability status is not a condition precedent to commercial operation</li> <li>• For FCDS projects, the PPA will contain TOD factors that include the value of FCDS. The TOD adjusted price will be reduced by a Deliverability Value until the project achieves FCDS. Once the project achieves FCDS, the Deliverability Value will be added back to the TOD-adjusted price. FCDS projects must achieve FCDS by no later than <b>Jan. 1, 2025</b></li> <li>• For Energy Only projects, the PPA will contain TOD factors that do not include the value of FCDS</li> </ul>

# Other Potential RPS Programs & Solicitations

Product	High-Level Description
Renewable Market-Adjusting Tariff (Re-MAT) Feed-In Tariff	<ul style="list-style-type: none"><li>• Standard offer with no RFO</li><li>• Project capacity of up to 3 MW permitted</li><li>• CPUC approval of the PPA will not be required</li><li>• Product Types: Baseload, Peaking, and Non-Peaking</li><li>• Program began November 1, 2013</li></ul>
Bioenergy Feed-In Tariff (SB1122 )	<ul style="list-style-type: none"><li>• Standard offer with no RFO</li><li>• Project capacity of up to 3 MW permitted</li><li>• CPUC approval of the PPA will not be required</li><li>• Bioenergy Product Types: Wastewater, Dairy/ Agricultural, and Forest</li><li>• Program currently under development at CPUC</li></ul>
Share the Sun	<ul style="list-style-type: none"><li>• Proposed that solar projects apply under Re-MAT FiT</li><li>• Proposed project size limit is 3 MW</li><li>• Program currently under development at CPUC</li></ul>
SunRate	<ul style="list-style-type: none"><li>• Proposed that solar projects apply under RAM</li><li>• Proposed project size limit is 10 MW</li><li>• Program currently under development at CPUC</li></ul>



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# Overview of Bid Evaluation and Selection

# Overview of PA Consulting Group and Barbara Sands

*PA Consulting Group (PA) is an independent, employee-owned, global management, systems and technology consulting firm of approximately 2,000 professionals.*

*PA's energy consulting practice includes more than 120 consultants with in-depth functional expertise and a broad range of experience that includes*

- Resource planning
- Transaction advisory services
- Industry restructuring
- ISO and utility operations
- Asset management
- Strategy & risk management

*Barbara Sands has over 20 years of experience in the energy industry specializing wholesale electric markets with a specific focus on renewable markets. Her experience includes the following:*

- SDG&E Independent Evaluator for the first four RAM RFOs
- Managed the valuation process for numerous renewable and non-renewable power assets
- Provided strategic resource planning and competitive rate design analyses for electric utilities
- Developed electric market modeling tools including renewable specific models
- Certified appraiser with the American Society of Appraisers (ASA)

# Role of the Independent Evaluator in the valuation process

The primary role of the Independent Evaluator (IE) is to ensure that SDG&E treats all bidders fairly and equitably and that no technology or counterparty is favored. In particular, the IE is expected to assure that affiliate bids are not favored.

The IE will also ensure that the bid selection process is transparent and is aligned with the RAM requirements.

SDG&E can also call on the IE's advice as to various evaluation issues.

The IE provides advice throughout the RFO process:

- *Prior to RFO process* - Reviews and comments on materials
- *During RFO process* - Reviews SDG&E process, analyzes bid evaluation and selection, assists with questions and issues, and participates in Procurement Review Group meetings
- *Completion of RFO process (SDG&E Advice Letter)* - Prepares IE Report to document process, comment on selected bids, and recommend any suggested changes for future RFO's

# Evaluation process for the RAM RFO

Once the bids are received and the relevant data is identified and extracted to a database, the evaluation process for the RAM RFO will consist of the following steps:

1. Place bids into the three defined types of products (a) Baseload, (b) Peaking As-Available, and (c) Non-Peaking As-Available
2. Screen the bids for conformance with the RAM eligibility requirements
3. Establish a Bid Ranking Price (TOD adjusted levelized contract cost plus Deliverability Adder plus Transmission Adder)
4. Select winning bids for projects with the lowest bid ranking price within each product category

# Elements of Bid Pricing, LCBF Analysis, and Deliverability

# Pricing Options – FCDS or Energy Only

## Full Capacity Deliverability Status (FCDS):

1. FCDS projects are capable of providing resource adequacy, and generally have a higher value than energy-only projects.
2. Projects which are located in SDG&E's local area are capable of providing local resource adequacy under CPUC and CAISO resource adequacy programs. Projects outside of SDG&E's local area are capable of providing system resource adequacy, which is less valuable than local resource adequacy.
3. FCDS projects capable of providing local resource adequacy are valued higher than FCDS projects capable of providing system resource adequacy.
4. FCDS projects must commit to achieve FCDS as close to COD as possible, but no later than the end of 2024.
5. The submitted price will be multiplied by the FCDS TOD factors as shown below for deliveries in each TOD period:

FCDS TIME OF DAY PRICE MULTIPLIERS						
Location	Summer On-Peak	Summer-Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
Local	3.340	1.049	0.960	1.026	0.759	0.702
System	2.289	0.973	0.956	1.169	0.883	0.816

# Pricing Options – FCDS or Energy Only

## Energy-Only Status:

1. All renewable resources are valued based upon their ability to displace other forms of generation. Projects which cannot provide resource adequacy are unable to displace a capacity-related attribute provided by other forms of generation, and may require SDG&E to procure additional resource adequacy to make up for the shortfall.
2. Energy-only projects outside of SDG&E's local area are valued higher than energy-only projects inside of SDG&E's local area.
3. The submitted price will be multiplied by the energy-only TOD factors as shown below for deliveries in each TOD period:

FCDS TIME OF DAY PRICE MULTIPLIERS					
Summer On-Peak	Summer-Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
1.364	1.021	1.024	1.265	0.955	0.883

# Deliverability Calculations – Deliverability Value

## Deliverability Value

**For FCDS bids, the Deliverability Value will be applied as a discount in the PPA to all TOD-adjusted prices for years prior to achievement of FCDS, but will not be used for bid evaluation.**

1. FCDS Bidders will have a Deliverability Value calculated for each submitted bid.
2. The Deliverability Value shall be computed by
  1. Setting the bid's appropriate Market Price Referent (MPR) value,
  2. Computing expected TOD-adjusted payments at the MPR price using the FCDS TOD multipliers and the project's delivery profile,
  3. Computing expected TOD-adjusted payments at the MPR price using the energy-only TOD multipliers and the project's delivery profile,
  4. Finding the present values of payment streams at the MPR price in each TOD period using both the FCDS and energy-only TOD multipliers,
  5. Subtracting the present values of the energy-only TOD payment streams from the present values of the FCDS TOD payment streams,
  6. Setting any negative differences to zero,
  7. Adding up all remaining differences to find a total value of deliverability,
  8. Dividing by the present value of energy deliveries to produce a Full Deliverability Value in \$/MWh,
  9. Multiplying by 60% to produce a system Deliverability Value if the project can only provide system RA instead of local RA to SDG&E.



## Sample Deliverability Value Calculation

The tables below provide an illustrative example of how the calculations described above would be applied to a bid for a 5 MW solar project with a term of 10 years that is expected to provide RA.

Calendar Year	Net Output Capacity (MW)	Estimated Annual Delivery over 12 months (MWh)	Capacity Factor
2013	5	10,731	24.50%
2014	5	10,731	24.50%
2015	5	10,731	24.50%
2016	5	10,731	24.50%
2017	5	10,731	24.50%
2018	5	10,731	24.50%
2019	5	10,731	24.50%
2020	5	10,731	24.50%
2021	5	10,731	24.50%
2022	5	10,731	24.50%

### ANNUAL PROFILE OF DELIVERIES

(% OF ANNUAL GENERATION IN EACH TOD PERIOD)

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
Annual Profile	13.93%	10.67%	9.88%	19.22%	28.27%	18.03%

# Sample Deliverability Value Calculation – Step 1

The 2011 MPR values (as approved by the Commission in Resolution E-4442) in \$/MWh:

Contract COD is  
2013

Contract term is  
10 years

Operation Date	Contract Term (years)							
	5	6	7	8	9	10	15	20
2012	\$69.31	\$71.01	\$72.59	\$74.09	\$75.51	\$76.89	\$83.53	\$89.56
2013	\$74.07	\$75.55	\$76.98	\$78.37	\$79.72	\$81.04	\$87.76	\$93.76
2014	\$77.63	\$79.07	\$80.48	\$81.85	\$83.21	\$84.54	\$91.50	\$97.55
2015	\$80.96	\$82.39	\$83.81	\$85.20	\$86.57	\$88.04	\$95.19	\$101.32
2016	\$84.14	\$85.60	\$87.05	\$88.47	\$90.01	\$91.56	\$98.83	\$105.09
2017	\$87.04	\$88.53	\$90.01	\$91.62	\$93.25	\$94.88	\$102.22	\$108.59
2018	\$90.00	\$91.53	\$93.23	\$94.94	\$96.65	\$98.31	\$105.70	\$112.18
2019	\$93.04	\$94.83	\$96.64	\$98.44	\$100.18	\$101.85	\$109.27	\$115.86
2020	\$96.44	\$98.35	\$100.25	\$102.08	\$103.82	\$105.50	\$112.96	\$119.65
2021	\$100.10	\$102.11	\$104.02	\$105.84	\$107.58	\$109.16	\$116.75	\$123.53
2022	\$104.04	\$106.04	\$107.93	\$109.72	\$111.34	\$112.99	\$120.66	\$127.52
2023	\$108.16	\$110.11	\$111.95	\$113.59	\$115.28	\$116.91	\$124.68	\$131.60

In this example, the base MPR value to be used will be \$81.04/MWh.

# Sample Deliverability Value Calculation – Steps 2 and 3

## Expected Annual Deliveries and TOD-adjusted MPR values

### FCDS:

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
Expected GWh	1.49	1.15	1.06	2.06	3.03	1.93
MPR \$/MWh	\$81.04	\$81.04	\$81.04	\$81.04	\$81.04	\$81.04
TOD Multiplier	2.501	1.342	0.801	1.089	0.947	0.679
TOD Price	\$202.69	\$108.76	\$81.75	\$88.26	\$76.75	\$55.03
FCDS Payment Stream (\$mil)	<b>\$0.30</b>	<b>\$0.12</b>	<b>\$0.07</b>	<b>\$0.18</b>	<b>\$0.23</b>	<b>\$0.11</b>

### Energy Only:

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
Expected GWh	1.49	1.15	1.06	2.06	3.03	1.93
MPR \$/MWh	\$81.04	\$81.04	\$81.04	\$81.04	\$81.04	\$81.04
TOD Multiplier	1.531	1.181	0.900	1.192	1.078	0.774
TOD Price	\$124.08	\$95.71	\$72.94	\$96.60	\$87.36	\$62.73
Energy-Only Payment Stream (\$mil)	<b>\$0.19</b>	<b>\$0.11</b>	<b>\$0.08</b>	<b>\$0.20</b>	<b>\$0.26</b>	<b>\$0.12</b>

# Sample Deliverability Value Calculation – Step 4

FCDS:

CONTRACT YEAR		Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
1		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
2		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
3		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
4		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
5		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
6		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
7		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
8		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
9		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
10		\$0.30	\$0.12	\$0.07	\$0.18	\$0.23	\$0.11
TOTAL FCDS PAYMENT STREAM		\$3.03	\$1.25	\$0.69	\$1.82	\$2.33	\$1.06
PV OF FCDS PAYMENT STREAM		\$2.16	\$0.89	\$0.49	\$1.30	\$1.66	\$0.76

Energy-Only:

CONTRACT YEAR		Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
1		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
2		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
3		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
4		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
5		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
6		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
7		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
8		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
9		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
10		\$0.19	\$0.11	\$0.08	\$0.20	\$0.26	\$0.12
TOTAL ENERGY ONLY PAYMENT STREAMS		\$1.85	\$1.10	\$0.77	\$1.99	\$2.65	\$1.21
PV OF ENERGY ONLY PAYMENT STREAMS		\$1.33	\$0.78	\$0.55	\$1.42	\$1.89	\$0.87

## Sample Deliverability Value Calculation – Steps 5 through 9

	Summer On-Peak	Summer Semi-Peak	Summer Off-Peak	Winter On-Peak	Winter Semi-Peak	Winter Off-Peak
PV of FCDS Payment Streams (\$ mil)	<b>\$2.16</b>	<b>\$0.89</b>	<b>\$0.49</b>	<b>\$1.30</b>	<b>\$1.66</b>	<b>\$0.76</b>
PV of Energy Only Payment Streams (\$ mil)	<b>\$1.33</b>	<b>\$0.78</b>	<b>\$0.55</b>	<b>\$1.42</b>	<b>\$1.89</b>	<b>\$0.87</b>
PV Difference (\$ mil)	\$0.84	\$0.11	-\$0.06	-\$0.12	-\$0.23	-\$0.11
FCDS Payment Premiums (\$ mil)	\$0.84	\$0.11	\$0.00	\$0.00	\$0.00	\$0.00

Total FCDS Payment Premium	\$0.95	mil
Present Value of total MWhs over project term	0.08	mil MWh
<b>Deliverability Value</b>	<b>\$12.34</b>	<b>per MWh</b>

For this example, the Full Deliverability Value for projects located in SDG&E's local area would be \$12.34/MWh.

If this project was not located within SDG&E's local area, a system Deliverability Value would be calculated by multiplying \$12.34/MWh by 60%, which would be \$7.41/MWh.

**If a project bid with FCDS cannot achieve FCDS by the beginning of contract deliveries, the Deliverability Value will be subtracted from each TOD-adjusted contract price until FCDS is achieved.**

# Deliverability Adder

## Deliverability Adder

**The Deliverability Adder will be applied only to the Bid Ranking Price in the RFO evaluation process and will not be used for contract pricing.**

1. All bidders will have a Deliverability Adder calculated for each submitted bid.
2. The Deliverability Adder shall be computed by the following:
  1. **For FCDS projects in SDG&E's local area**, the deliveries shall be assumed to provide full deliverability value to SDG&E. The Deliverability Adder shall be zero and will add nothing further to the project's Bid Ranking Price.
  2. **For energy-only projects in SDG&E's local area**, the deliveries will be assumed to provide no deliverability value to SDG&E. The project will not defer any costs of resource adequacy, deliverability, or other capacity-related attributes which SDG&E must obtain for compliance with CPUC and CAISO resource adequacy programs. A Deliverability Adder equal to 100% of the Deliverability Value will be assessed.
  3. **For energy-only projects outside of SDG&E's local area**, the deliveries will be assumed to provide no deliverability value to SDG&E. Since such a project could only provide system resource adequacy instead of local resource adequacy, only the proportional value of system resource adequacy will be used as a Deliverability Adder, which shall be 60% of the Deliverability Value.
  4. **For FCDS projects outside of SDG&E's local area**, deliveries shall be assumed to provide system resource adequacy to SDG&E. In this case, the project will not defer any costs of local resource adequacy but will defer costs of system resource adequacy, which are generally 60% of the cost of local resource adequacy. Such a project will be assessed a Deliverability Adder equal to  $(100\% - 60\% = 40\%)$  of the Deliverability Value of the project.

## Sample Deliverability Adder Calculation

For the example shown previously, the Full Deliverability Value in SDG&E's local area would be \$12.34/MWh. If this project were not located within SDG&E's local area, a system Deliverability Value would be calculated by multiplying \$12.34/MWh by 60%, which would be \$7.41/MWh.

If the sample project was in SDG&E's local area, but bid in as energy-only, the full Deliverability Adder of \$12.34/MWh would be added to the Bid Ranking Price. If the sample project was outside of SDG&E's local area and bid in as energy-only, the system Deliverability Adder (equal to 60% of the Deliverability Value) of \$7.41/MWh would be added to the Bid Ranking Price.

If the sample project was outside of SDG&E's local area but bid as an FCDS project, the adder would be 40% of the Deliverability Value, or \$4.94/MWh, which would be added to the Bid Ranking Price. FCDS bids in SDG&E's local area would receive a zero Deliverability Adder.

DELIVERABILITY SAMPLE TABLE

INTERCONNECTION TYPE	IN SDG&E AREA	IN CALIFORNIA ISO; OUTSIDE SDG&E AREA
FCDS	Deliverability Adder = 0	Deliverability Adder = 40% of Deliverability Value = \$4.94/MWh
ENERGY-ONLY	Deliverability Adder = 100% of Deliverability Value = \$12.34/MWh	Deliverability Adder = 60% of Deliverability Value = \$7.41/MWh

# Transmission Adder Calculation

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## Transmission Adder

1. Transmission costs from a project's latest transmission study will be used to calculate a transmission adder that will be applied to the project's Bid Ranking Price.
2. Only transmission costs that are reimbursable to the bidder will be used to compute the transmission adder. Amounts paid by the bidder for distribution interconnections and transmission-level upgrades that are not reimbursed will not be used in calculating the transmission adder.
3. In all cases, the reimbursable costs shown in the transmission studies submitted by the bidder will be used for adder computation.



# Overview of Bidding Protocols

## Required Forms

- 1) Project Description Form** – *Submit one per project.*
- 2) Pricing Form (Baseload, Peak or Off-Peak)**– *Respondents may submit one Energy-Only option and one FCDS option per project.*
- 3) Site Control Documentation**
- 4) Copy of completed interconnection agreement, completed System Impact Study, a Phase I/II interconnection study, or results from the WDAT or CAISO Fast Track process**

**PPA:** Bids that are shortlisted will receive from SDG&E a form RAM PPA (which is available on SDG&E's RAM RFO Website) that is redlined to reflect the relevant provisions that are applicable to the proposed project as indicated by Respondent in their Project Description Form. Bidders do not have to submit a red-lined PPA with their Bid.

*\*The Project Description Form must be in Word or Word-compatible format (not in PDF). The Pricing Forms must be in Excel or Excel-compatible format (not in PDF). The copy of completed interconnection agreement, interconnection study and site control documentation must be in PDF format.*

# The Bid Form

Bid Form Input Areas shown in light green.

Please do not input text in areas where numbers are expected to be used.

COD, contract term, and pricing type (FCDS or Energy Only)

In or Out of SDG&E's area

Company Information										Company Representative																				
Company Name Submitting Offer: Big Time Solar Company					Primary Contact					Secondary Contact																				
Company Name on Potential Contract: Big Time Solar LLC					Contact Name:					Contact Title:																				
Company Address:					Office Number:					Cell Number:																				
Company is Women/Minority/Disabled/Veteran owned Business Enterprise as per CUC General Order 156?					Email:					Installed Nameplate MWdc: 1.5																				
No					Net Contract Capacity, MWac: 1.05					Solar Technology: Crystalline Silicon																				
Offer Characteristics										System Characteristics																				
Note: Flat pricing is no longer an option for RAM bids. All prices must be adjusted with time-of-day factors.																														
Commercial Operation Date: 1/1/2013					Phase II or Deliverability Study Completed? Yes					Tracking system: Fixed axis					Installation Area, square feet:															
Interconnection Type: FCDS					Expected Completion Date of Reliability Upgrades: 1/1/2013					Manufacturer:					Project in SDG&E's Local Area? Yes															
Contract Term (years): 10					Year FCDS Achieved (default of 2022 if no study): 2013					Deliverability Type: Full																				
Your Deliverability Value Is: \$ 12.34 /MWh										This amount will be added to Bid Ranking Prices in the evaluation process.																				
Your Deliverability Adder Is: \$ - /MWh										TOD prices in the PPA will be reduced by this amount for FCDS bids in years where FCDS has not been achieved.																				
										ENERGY DELIVERIES (MWH)										TOD PRICES (\$/MWH)										TOTAL CONTRACT COST
Contract Year	Year Begins	Year Ends	Contract Capacity (MW AC)	Expected Energy Deliveries (MWh)	Bid Price (\$/MWh)	TOD-Adjusted Price	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	TOTAL CONTRACT COST											
1	1/1/2013	12/31/2013	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
2	1/1/2014	12/31/2014	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
3	1/1/2015	12/31/2015	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
4	1/1/2016	12/31/2016	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
5	1/1/2017	12/31/2017	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
6	1/1/2018	12/31/2018	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
7	1/1/2019	12/31/2019	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
8	1/1/2020	12/31/2020	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
9	1/1/2021	12/31/2021	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
10	1/1/2022	12/31/2022	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994											
11													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
12													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
13													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
14													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
15													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
16													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
17													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
18													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
19													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
20													\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0											
Your Levelized TOD adjusted price						\$ 81.91 /MWh	FOR FCDS BIDS: The Levelized TOD adjusted price shown here assumes that FCDS is achieved as of COD. Bids that cannot provide FCDS at COD will have their PPA TOD prices reduced by the Deliverability Value until FCDS is achieved, which will produce a lower TOD Adjusted price in the PPA than what is shown here.																							

AC Contract Capacity, MWh expected deliveries, and bid price in \$/MWh



# The Bid Form (Continued)

## For Solar Projects, include:

- DC Nameplate Capacity
- AC Nameplate Capacity
- Type of Solar Technology (crystalline, thin film, etc)
- Panel Manufacturer, Tracking Type, Installation Area

## For Non-Solar Projects, include:

- AC Nameplate Capacity,
- Installation Area
- Mark all others as N/A

Company Information										Company Representative																			
Company Name Submitting Offer: Big Time Solar Company					Contact Name:					Primary Contact					Secondary Contact														
Company Name on Potential Contract: Big Time Solar LLC					Contact Title:																								
Company Address:					Office Number:																								
					Cell Number:																								
					Email:																								
Company is Women/Minority/Disabled Veteran owned Business Enterprise as per CPUC General Order 156?					No																								
Offer Characteristics										System Characteristics																			
<b>Note: Flat pricing is no longer an option for RAM bids. All prices must be adjusted with time-of-day factors.</b>										Installed Nameplate MWdc: 1.5 Net Contract Capacity, MWac: 1.05 Solar Technology: Crystalline Silicon Manufacturer: Tracking system: Fixed axis Installation Area, square feet: Project in SDGE's Local Area? Yes Deliverability Type: Full																			
Commercial Operation Date: 1/1/2013					Phase II or Deliverability Study Completed? Yes																								
Interconnection Type: FCDS					Expected Completion Date of Reliability Upgrades: 1/1/2013																								
Contract Term (years): 10					Year FCDS Achieved (default of 2022 if no study): 2013																								
Your Deliverability Value Is: \$ 12.34 /MWh					Your Deliverability Adder Is: \$ - /MWh																								
										TOD prices in the PPA will be reduced by this amount for FCDS bids in years where FCDS has not been achieved. This amount will be added to Bid Ranking Prices in the evaluation process.																			
										ENERGY DELIVERIES (MWH)										TOD PRICES (\$/MWH)									
Contract Year	Year Begins	Year Ends	Contract Capacity (MW AC)	Expected Energy Deliveries (MWh)	Bid Price (\$/MWh)	TOD-Adjusted Price	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	Winter Off-Peak	Winter Semi-Peak	Winter On-Peak	Summer Off-Peak	Summer Semi-Peak	Summer On-Peak	TOTAL CONTRACT COST										
1	1/1/2013	12/31/2013	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	0.679	0.947	1.089	0.567	0.801	1.342	2.501	\$8,789,935									
2	1/1/2014	12/31/2014	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
3	1/1/2015	12/31/2015	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
4	1/1/2016	12/31/2016	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
5	1/1/2017	12/31/2017	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
6	1/1/2018	12/31/2018	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
7	1/1/2019	12/31/2019	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
8	1/1/2020	12/31/2020	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
9	1/1/2021	12/31/2021	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
10	1/1/2022	12/31/2022	5.00	10731	\$ 70.00	\$ 81.91	1,934.8	3,033.7	2,062.5	1,060.2	1,145.0	1,494.8	\$47.53	\$66.29	\$76.23	\$56.07	\$93.94	\$175.07	\$878,994										
11					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0										
12					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
13					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
14					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
15					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
16					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
17					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
18					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
19					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									
20					\$								\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0									

## Don't Forget About the Connection! (below the pricing table)

- If in SDG&E's territory, use descriptions from the interactive interconnection map at <http://sdge.com/builderservices/dgmap/>
- In Queue Position Number, specify which queue you are in (CAISO or the host utility's WDAT)
- For the question regarding interconnection cost, please specify *only the non-reimbursable costs that are already accounted for in your bid price*

Electrical Interconnection	
Interconnection Point	
Interconnection Voltage Level	
Interconnection Status	
Queue Position Number (if assigned)	
How much in non-reimbursable interconnection cost is assumed in your bid price?	

# Delivery Profile

These cells should contain **capacity factors** (expected hourly generation divided by maximum capacity) for each individual hour. Capacity factors should be between 0% and 100%.

Delivery Profile													Request for Offers		
													2011 RAM Solicitation		
Instructions:															
Populate the table with expected hourly capacity factor of your project during the indicated time periods.															
- Assume project is at 100% completion of all phases.															
- Disregard any degradation over time.															
EXPECTED NET CAPACITY FACTOR (%)															
Weekday	Hour Beginning	Hour of Day	Hour of Week	WINTER					SUMMER				WINTER		
				January	February	March	April	May	June	July	August	September	October	November	December
Monday	12:00 AM	1	1	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	1:00 AM	2	2	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	2:00 AM	3	3	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	3:00 AM	4	4	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	4:00 AM	5	5	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	5:00 AM	6	6	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	6:00 AM	7	7	0%	1%	4%	4%	18%	24%	16%	5%	0%	0%	2%	0%
Monday	7:00 AM	8	8	16%	26%	31%	40%	54%	62%	50%	41%	32%	17%	27%	19%
Monday	8:00 AM	9	9	45%	55%	63%	78%	87%	90%	79%	76%	69%	50%	57%	50%
Monday	9:00 AM	10	10	58%	61%	81%	91%	93%	95%	89%	84%	83%	73%	64%	61%
Monday	10:00 AM	11	11	58%	59%	83%	91%	95%	96%	90%	87%	85%	75%	61%	56%
Monday	11:00 AM	12	12	58%	59%	85%	92%	94%	96%	92%	88%	85%	72%	62%	54%
Monday	12:00 PM	13	13	58%	61%	83%	88%	93%	96%	87%	88%	84%	73%	64%	56%
Monday	1:00 PM	14	14	61%	63%	85%	90%	95%	95%	89%	83%	83%	73%	66%	58%
Monday	2:00 PM	15	15	60%	62%	82%	90%	94%	94%	92%	82%	87%	74%	66%	55%
Monday	3:00 PM	16	16	45%	57%	78%	84%	89%	92%	89%	78%	85%	68%	45%	33%
Monday	4:00 PM	17	17	0%	26%	58%	74%	85%	87%	87%	78%	69%	53%	9%	0%
Monday	5:00 PM	18	18	0%	0%	30%	52%	66%	76%	71%	61%	42%	8%	1%	0%
Monday	6:00 PM	19	19	0%	0%	4%	8%	34%	46%	40%	20%	2%	0%	0%	0%
Monday	7:00 PM	20	20	0%	0%	0%	0%	0%	5%	3%	0%	0%	0%	0%	0%
Monday	8:00 PM	21	21	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	9:00 PM	22	22	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	10:00 PM	23	23	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Monday	11:00 PM	24	24	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

## Delivery Profile (Continued)

These numbers below the Delivery Profile compute the distribution of the project's energy deliveries in each TOD period over a typical year.

Total MWhs in Typical Week:	32	37	54	62	70	74	68	61	56	45	37	31
Total MWhs in Month:	143	148	238	264	309	316	301	270	242	197	157	137
% of annual delivery in month:	5%	5%	9%	10%	11%	12%	11%	10%	9%	7%	6%	5%
Winter Off-Peak	1.50%	1.56%	2.50%	2.78%	3.25%	3.32%					1.65%	1.44%
Winter Semi-Peak	2.37%	2.37%	3.50%	3.80%	4.35%	4.41%					2.65%	2.41%
Winter On-Peak	1.38%	1.53%	2.75%	3.14%	3.77%	3.90%					1.47%	1.19%
Summer Off-Peak							3.17%	2.84%	2.54%	2.07%		
Summer Semi-Peak							2.66%	2.39%	2.12%	1.75%		
Summer On-Peak							5.26%	4.71%	4.23%	3.43%		
Annual TOD Breakdown:	17.99%	25.86%	19.12%	10.62%	8.92%	17.63%						
Typical Profiles:												
Solar Photovoltaic	18.50%	27.67%	18.58%	10.07%	7.01%	18.17%						
Solar Thermal	18.25%	24.62%	19.67%	10.89%	10.05%	16.51%						

# Mistakes on forms that can cause rejection of a bid

- **Entering prices in cents/kWh and deliveries in kWh instead of \$/MWh and MWh**
- **Critical information missing (such as project location)**
- **Bidding DC capacity and energy instead of AC capacity and energy**
- **Adding or renaming worksheets**
- **Making the utility fill out your bid form**



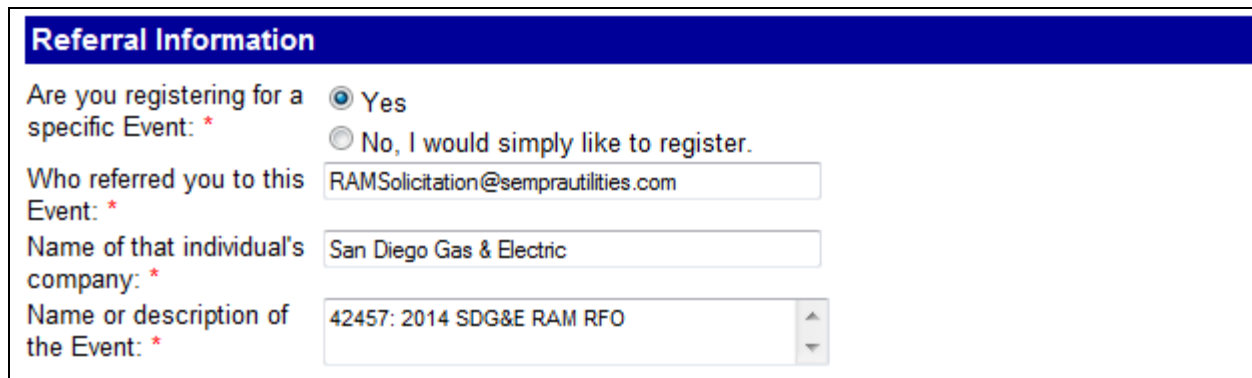
# Bid Submission Process

Leilan Johnson | Origination Analyst

# Registration and Logging On

## 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](http://www.PowerAdvocate.com)
  - Request for access using the Referral Information



The screenshot shows a form titled "Referral Information" with a blue header. The form contains the following fields and options:

- Are you registering for a specific Event: \*** with radio buttons for  Yes and  No, I would simply like to register.
- Who referred you to this Event: \*** with a text input field containing "RAMSolicitation@semprautilities.com".
- Name of that individual's company: \*** with a text input field containing "San Diego Gas & Electric".
- Name or description of the Event: \*** with a text input field containing "42457: 2014 SDG&E RAM RFO".

3. Request for access using the PowerAdvocate® link located at: <https://www.poweradvocate.com/pR.do?okey=42457&pubEvent=true>

## How to Log On:

1. Launch a web browser and go to: [www.poweradvocate.com](http://www.poweradvocate.com), and then click on the orange **Login** button.
2. Enter your account **User Name** and **Password** (both are case-sensitive)
3. Click **Login**.

# The Supplier Dashboard

## What information is displayed on my Dashboard?

Your Dashboard displays all bid events to which you have been invited.

**Dashboard** Company Filter: All Companies

Event / Buyer	Msg	Open	Close	Download Documents	Upload Documents	Commercial	Technical	Pricing
190-cbl-1: 190 First St. Cable/Wiring Electric Power Utility		05/16/10 8:00 AM EDT	06/08/10 4:00 PM EDT	1	2	3	4	5
T42g: Colorado River Sluice Gates Great Western Utilities	1/1	04/04/10 10:00 AM EDT	06/30/10 4:00 PM EDT	1	2	3	4	5
1998-01: Grid Expansion Electric Power Utility		09/01/10 8:00 AM EDT	12/29/10 4:00 PM EST	1	2	3	4	5

**Open and Pending Pre-Bid events** (indicated by an upward arrow pointing to the first two rows)

**Pending (not Pre-Bid) and Closed events** (indicated by a downward arrow pointing to the third row)

**Buying entity** (indicated by a red arrow pointing to the buyer name in the third row)

**Event name/number** (indicated by a red arrow pointing to the event name in the third row)

**Number of unread/total messages; click to access the Messaging tab.** (indicated by a red arrow pointing to the '1/1' message count in the third row)

The numbers on the Dashboard represent a general workflow, though you can work in any order:


- 1 Download the bid package.
- 2 Upload bid documents, proposals, etc.
- 3 4 5 Fill in online datasheets if present.

# Accessing the RFP Event and Submitting Documents

## How to Access the RFP Event from Dashboard:

1. To download the RFP package, click  or the **1. Download Documents** tab.

- RFO Document
- Project Description
- Pricing Form
- Interconnection Agreement, System Impact Study, a Phase I Interconnection Study, or Fast Track Documentation
- Site Control Documentation

2. To upload documents, click  or the **2. Upload Documents** tab. Select the “Commercial and Administration” Document Type, then click **Browse** to navigate to your document and click **Open**. Finally, click **Submit Document**.

- Project Description Form (.doc or .docx)
- The Pricing Form (.xls or .xlsx)
- Interconnection Documents (.pdf)
- Site Control Documentation (.pdf)

# More Information & Additional Help

## PowerAdvocate Support

- [Support@poweradvocate.com](mailto:Support@poweradvocate.com)
- (857) 453-5800

## Online Help

- Access the Help System at any time by clicking on the **Help** button



Dashboard Profile Company **Help** Logout

## Event Dashboard

Fill-In Data Sheets

Event	Msg	Open	Close	Download Documents	Upload Documents	Commercial	Technical	Pricing
35697 : 2013 SDGE Energy RFP Sempra Energy		05/02/13 5:00 PM EDT	05/14/13 4:00 PM EDT	1	2	3	4	5

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# Program Updates and RAM PPA

# Program Updates to RAM V

## CPUC Resolution E-4655

Subject of Change	Revision to RAM
Condition Precedent, interconnection agreement date and interconnection costs	<ul style="list-style-type: none"><li>• The RAM PPA will now include a CP with respect to interconnection agreement date and a not to exceed amount for interconnection costs</li></ul>
Economic Curtailment Provisions	<ul style="list-style-type: none"><li>• The RAM PPA will now include economic curtailment for up to 10% of the Contract Quantity cumulatively per Contract Year</li><li>• Buyer to reimburse Seller for deemed delivered energy during economic dispatch down periods</li><li>• Seller System Requirements: CAISO's Automatic Dispatch System (ADS) and CAISO'S Application Programming Interfaces (API)</li></ul>
Date by which projects must achieve FCDS	<ul style="list-style-type: none"><li>• The RAM PPA has been updated to reflect projects have until December 31, 2024 to achieve FCDS (previous date was December 31, 2021)</li></ul>
COD and test energy dates	<ul style="list-style-type: none"><li>• The RAM PPA has been updated to reflect: 1) a project's COD shall not occur earlier than 6 months prior to its GCOD, and 2) a project shall not deliver test energy earlier than 9 months prior to its GCOD</li></ul>

*Please submit your questions by*

*June 13, 2014*

*to*

*RAMSolicitation@semprautilities.com*



# 2014 CAISO Generator Interconnection & Deliverability Allocation Procedures

Bruno Velosa | Transmission Planning Team Lead

## *Interconnection to SDG&E's Transmission System*

- 2012 CAISO merged the Transmission Planning Process (TPP) and the Generator Interconnection Procedures (GIP) Integration (resulted in the new Generation Interconnection Procedures: GIDAP)

# CAISO Generator Interconnection and Deliverability Allocation Procedures

Interconnection to SDG&E transmission system is governed by the CAISO's FERC approved Tariff:

- CAISO Tariff Appendix Y (GIP tariff) applies to interconnection requests through Cluster 4

[http://www.caiso.com/Documents/TariffAppendixY\\_Nov5\\_2012.pdf](http://www.caiso.com/Documents/TariffAppendixY_Nov5_2012.pdf)

- CAISO Tariff Appendix DD (GIDAP tariff) applies to interconnection requests starting with Cluster 5

[http://www.caiso.com/Documents/TariffAppendixDD\\_Nov5\\_2012.pdf](http://www.caiso.com/Documents/TariffAppendixDD_Nov5_2012.pdf)

- **Cluster Windows:** Cluster 6, April 1<sup>st</sup> to April 30<sup>th</sup> 2013 and Cluster 7, April 1<sup>st</sup> to April 30<sup>th</sup>, 2014.

## GIDAP PROCESS

- 
- **Interconnection Request (IR)**

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  - **Scoping Meeting**

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  - **Project Grouping**

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  - **Phase I Interconnection Study**

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  - **Phase II Interconnection Study**

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  - **Posting of Financial Security**

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  - ❖ **Large/Small Generator Interconnection Agreements (LGIA/SGIA)**

# Cluster Study Windows and IR

During the Cluster Study Windows, Interconnection Customers (ICs) must submit a completed **Interconnection Request (IR)** and provide evidence to demonstrate **Site Exclusivity** (or an additional \$250K for Large/\$100K for Small deposit in lieu of Site Exclusivity)

A completed IR includes:

- IR form
- Point of Interconnection (POI)
- Technical Data (Attachment A, Appendix 1)
- Voltage Level
- Study Deposit - \$50,000 plus \$1,000 per MW (\$250K max.)
- IC elects deliverability:
  - o Full Capacity (FC) - Delivery Network Upgrades for deliverability built, if needed, required to qualify for Resource Adequacy (RA) in PPA
  - o Partial Deliverability for \_\_\_% of electrical output
  - o Energy Only (EO) - No Delivery Network Upgrades for deliverability built, not qualified for RA

**NOTE:** For Cluster 5 under the CAISO Tariff Appendix DD, will address high cost & large scope DNU through the TPP.

# Scoping Meeting and Project Grouping

- CAISO to schedule Scoping Meeting within 5 Business Days of the IR being deemed complete
- Scoping Meetings must be completed within 60 days of the close of the Cluster Study Window
- Face to Face project review with SDG&E and CAISO
- Sets the stage for development of the Phase I Study Agreement
- IC must designate Phase I Point of Interconnection (POI) within 3 Business Days of the Scoping Meeting
- CAISO tenders Phase I Study Agreement including study plan to IC within 10 Business Days of POI designation.
- IC to execute the Phase I Study Agreement within 30 days

*After the Scoping Meetings, at the CAISO's option and in coordination with SDG&E, an IR may be studied individually or in a group study based on their interconnection points and shared transmission needs.*

# Phase I Interconnection Study

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- Commences July 1st each year – Completed and Final Phase I Study report issued by year-end
- SDG&E - Reliability Network Upgrade (RNU) studies (a short circuit, stability, and power flow analysis, including off-peak analysis)
- CAISO - Delivery Network Upgrade (DNU) studies (an On-Peak and Off-Peak (for information only) Deliverability Assessment for FC projects, required to receive Resource Adequacy (RA) qualification for PPA)
- Preliminary identification of the Interconnection Facilities and Network Upgrades required for each IR - Assess the POI and potential alternatives
- Establish max. cost responsibility for RNU, Local Delivery Network Upgrades (LDNU), and Interconnection Facilities
- Phase I Study Results Meeting - within 30 Days of study completion
- Within 5 B-Days of Results Meeting, IC may submit to CAISO desired modifications to the IR, including: decrease in the electrical output of proposed project, modify technical parameters of facility, and/or modify the interconnection configuration.

# Phase I Interconnection Study

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- GIDAP Phase I results provide each project with cost cap for its RNU and LDNU
  - *Retains GIP provisions on security postings*
  - *LDNU cash reimbursement to align with TP deliverability allocation*
- **Phase I does not cap project exposure to ADNU costs**

# Between Phase I and Phase II Interconnection Studies

- To continue to Phase II, IC must elect either Option (A) or Option (B)
- **Option (A)**
  - *Project requires TP deliverability to continue to commercial operation*
  - *Project posts security for RNU and LDNU*
- **Option (B)**
  - *Project is willing & able to pay for all Network Upgrades without cash reimbursement by ratepayers*
  - *Project posts security for RNU, LDNU, and ADNU*
  - *ADNU security posting equals \$/MW cost rate determined in Phase I Study, times project MW deliverability*
  - *ADNU no cash reimbursement, treated as merchant transmission, eligible for Congestion Revenue Rights (CRRs)*



## Phase II Interconnection Study

- Commences May 1st each year – Completed and Final Phase II Study
- Updates analyses performed in the Phase I studies to account for changes, i.e. changes to IRs, withdrawal of Irs, as applicable
- Identifies final Network Upgrades (RNU, LDNU, ADNU) needed to physically interconnect the Generating Facilities and assigns responsibility for financing the identified final Network Upgrades
- Identifies ADNU cost estimates, but not cost caps for Option (B) projects
- Identifies final POI and SDG&E's and IC's Interconnection Facilities and provides cost estimate of the final SDG&E's and IC's Interconnection Facilities
- Phase II Study Results Meeting within 30 Days following Study completion. CAISO, SDG&E, and the IC discuss the Phase II Interconnection Study report, including selection of the final COD.

*Note: CAISO shall coordinate the Phase I and Phase II Interconnection Studies with SDG&E and any Affected System Operators*

# Application of Posting Requirements for NUs to (A)& (B) Projects

<p style="text-align: center;"><i>Network Upgrades</i></p> <ul style="list-style-type: none"> <li>•ADNU, LDNU, RNU for B projects</li> <li>•LDNU and RNU for A projects</li> </ul>			
Project Size	First Posting (Due 90 days after phase I study complete)	Second Posting (Due 180 days after phase II study complete)	Third Posting (Due at start of construction)
20 MW or less	<p>Lesser of</p> <ul style="list-style-type: none"> <li>• 15% of phase I study estimated network upgrade costs</li> <li>• \$20,000 per MW</li> </ul> <p>(but not less than the lesser of \$50,000, or the estimated cost of network upgrades)</p>	<p>Lesser of</p> <ul style="list-style-type: none"> <li>• \$1 million</li> <li>• 30% of lower of phase I or phase II study estimated network upgrade costs</li> </ul> <p>(but not less than the lesser of \$100,000, or the estimated cost of the network upgrades)</p>	100% of lower of phase I or phase II study estimated network upgrade costs
Greater than 20MW	<p>Lesser of</p> <ul style="list-style-type: none"> <li>• \$7.5 million</li> <li>• 15% of Phase I estimated network upgrade costs</li> <li>• \$20,000 per MW</li> </ul> <p>(but not less than the lesser of \$50,000, or the estimated cost of network upgrades)</p>	<p>Lesser of</p> <ul style="list-style-type: none"> <li>• \$15 million</li> <li>• 30% of lower of phase I or phase II study estimated network upgrade costs</li> </ul> <p>(but not less than the lesser of \$500,000, or the estimated cost of the network upgrades)</p>	100% of lower of phase I or phase II study estimated network upgrade costs

# Generator Interconnection Agreements (LGIA & SGIA)

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- Three-party agreement between the CAISO, SDG&E, and IC
- SDG&E to provide Draft GIA to IC within 30 Days of final Phase II Study report
- IC written comments/indication of no comments to the SDG&E and CAISO due within 30 Days of receipt of the Draft GIA
- Negotiations to be completed and GIA executed within ~120 Days following completion of Phase II Interconnection Study report.
- SDG&E and CAISO provide final GIA to IC within 15 Business Days after completion of GIA negotiation process.

## Reimbursement of LDNU postings

- *All projects are reimbursed for RNU costs up to \$60,000 per MW of installed capacity after commercial operation.*
- *Option (A) and (B) projects allocated TP deliverability receive full reimbursement of LDNU postings after commercial operation.*
- *Option (A) projects not allocated TP deliverability that remain in queue as energy only are reimbursed for first LDNU posting.*
- *Option (B) projects not allocated TP deliverability are not eligible for reimbursement of LDNU or ADNU costs*

## Option (A) projects

- *An Option (A) project that does not obtain TP deliverability in the current cluster allocation may either:*
  - *Execute an Energy Only (EO) GIA, or*
  - *Defer execution of EO GIA and “park” for one cycle, or*
  - *Withdraw from the queue*
- *If it parks and does not obtain TP deliverability in the next cluster’s allocation, it must either*
  - *Withdraw from the queue, or*
  - *Go forward as an EO project and meet all requirements associated with an EO GIA.*
- *If it withdraws, it is eligible for partial refund of first posting, based on failure to be allocated deliverability*
  - *Refund eligibility will extend to 18 months after phase II*

## Option (B) projects

- *IF an Option (B) project is not allocated TP deliverability in the current cluster allocation period, it must either*
  - *Execute a GIA agreeing to pay for needed ADNU and LDNU without cash reimbursement, or*
  - *Withdraw from the queue*
- *IF the Option (B) project withdraws, it will be eligible for partial refund of first security posting if its Phase II ADNU cost estimate exceeds Phase I by lesser of 20% or \$20 million*
  - *Must withdraw no later than 180 days after phase II results to be eligible for partial refund*
- *An Option (A) or (B) project allocated TP deliverability must meet annual retention criteria or lose the allocation*
  - *Loss of allocation does not terminate GIA: project may amend GIA to continue as Energy Only*

# Generation Interconnection Information

**SDG&E Interconnection Website:** <http://www.sdge.com/generation-interconnections/overview-generation-interconnections>

- Download and review SDG&E Interconnection Handbook
- Links to CAISO interconnection queue, tariffs and websites
- Links to SDG&E interconnection queue, tariffs and websites
- Link to NERC/WECC Reliability Standards
- Links to Process Summaries
- Link to SDG&E Self Generation Technologies site

**CAISO Generation Interconnection Process Contact:**

- Lead Interconnection Specialist : Judy Brown (916) 608-7062  
[JBrown@caiso.com](mailto:JBrown@caiso.com)

**SDG&E Contacts:**

- Generation Interconnection Team Lead: Bruno Velosa (858) 654-8293  
[BVelosa@semprautilities.com](mailto:BVelosa@semprautilities.com)
- Generation Interconnection Project Manager: Marlene Mishler (858) 654-8640  
[MMishler@semprautilities.com](mailto:MMishler@semprautilities.com)
- Energy Administrator: Khoang Ngo (858) 637-7905 [KNgo@semprautilities.com](mailto:KNgo@semprautilities.com)

**Wholesale Distribution Open  
Access  
Tariff (WDAT)  
Generator Interconnection Process**



# Wholesale Distribution Open Access Tariff – Generator Interconnection Process (GIP)



## Distribution Interconnections

- Wholesale Distribution Open Access Tariff (WDAT) is managed by SDG&E's Customer Generation group under the Transmission & Distribution Engineering Department
- SDG&E's distribution voltage is defined as facilities operating at 12.47 kV or below
- All Applications must be submitted to SDG&E's Customer Generation group
- Pursuant to SDG&E's WDAT Attachment H –Generator Interconnection Procedures (GIP)

# Application Package

## *Distribution Interconnection Application Package*

- Complete Interconnection Request
- Site Control Evidence
- Site Plan Diagram
- Single Line Diagram
- Invoice sent to Interconnection Customer (IC)\*

**Application Location - <http://sdge.com/wdat>**

## **Interconnection Package**

*Email to:*

*WDATSGIPAPPLICATIONS@semprautilities.com*

*Or mail to:*

*Customer Generation – CP52F*

*San Diego Gas & Electric*

*8316 Century Park Court*

*San Diego, CA 92123-1582*

## **Processing Fee\***

*Customer Payment Services – CP61C*

*San Diego Gas & Electric*

*PO Box 129831*

*San Diego, CA 92112-9831*

## Application Process Timeline: (Fast Track & Study Process)

Process Milestone	Duration	Responsible Party
Submit Application	Clock Starts	Interconnection Customer (IC)
Application Deemed Complete or Provide Notice of Additional Items	10 BD	SDG&E
Provide Additional Items or Requests Extension	Additional 10 BD	Interconnection Customer (IC)
Deem Application Complete or Withdraw Application		SDG&E

### Sec 6.1

#### Reasonable Efforts

The Distribution Provider shall make reasonable efforts to meet all time frames provided in these procedures, including the payment of refunds, unless the Distribution Provider and the Interconnection Customer agree to a different schedule. If the Distribution Provider cannot meet a deadline or timeline provided herein, it shall notify the Interconnection Customer, explain the reason for the failure to meet the deadline, and provide an estimated time by which it will complete the applicable interconnection procedure in the process.

# Fast Track & Study Process

## *Fast Track - approximately 6 months*

- Generator Project does not exceed 2MW
- Must Pass Fast Track Screens under Section 2
- \$500 non-refundable processing fee + \$1,000 non-refundable study deposit
- Small Generator Interconnection Agreement (SGIA)

## *Independent Study Process - approximately 18 months*

- Generator Project; Failed Fast Track or  $\leq 20$ MW
- Follow Sections 3 Study Process
- \$800 non-refundable processing fee + study deposits:
  - Independent - \$10,000 (<5MW)
  - Facilities - \$15,000 (<5MW)
- Small Generator Interconnection Agreement (SGIA)

## Fast Track & Study Process (cont.)

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### *Cluster Study Process – approximately 18 months*

- **Generator Project ( $\leq 20$ MW) grouped in a cluster with other projects**
- **Follow Section 4 Study Process**
- **\$800 non-refundable processing fee + study deposit:**
  - **\$50,000 + \$1,000/MW**
- **Small Generator Interconnection Agreement (SGIA)**

# Study Process & Scoping Meeting

## *Scoping Meeting*

- **Allows Face to Face Interactions with IC and SDG&E**
- **Review the Project**
  - IC provides high level project overview
  - SDG&E Distribution Planning provides feedback, system information, suggests any alternatives
- **Agree on a Point of Interconnection (POI) and generator size**
- **Review CAISO Metering & Telemetry requirements**
- **Determine Next Steps**
  - System Impact Study/Phase I
  - Facilities Study/Phase II
  - Small Generator Interconnection Agreement (SGIA)

# Independent Study Process

Study	Timing	Study Procedures	Study Deposit
System Impact Study	60 BD	<ul style="list-style-type: none"><li>• Dynamic Analyses</li><li>• Updated Interconnection Cost estimates</li></ul>	\$10,000
Facilities Study	45/60 BD	<ul style="list-style-type: none"><li>• Electrical switching configuration</li><li>• Cost of equipment, engineering, procurement and construction work</li><li>• Time required to complete construction and interconnect</li><li>• Final Interconnection Cost estimates</li></ul>	\$15,000

# Cluster Study Process

Study	Timing	Study Procedures	Study Deposit
Phase I (Start June 1)	200 CD	<ul style="list-style-type: none"> <li>• Dynamic Analyses</li> <li>• Updated Interconnection Cost estimates</li> </ul>	\$50,000 + \$1,000/MW
Phase II (Start May1)	205 CD	<ul style="list-style-type: none"> <li>• Electrical switching configuration</li> <li>• Cost of equipment, engineering, procurement and construction work</li> <li>• Time required to complete construction and interconnect</li> <li>• Final Interconnection Cost estimates</li> </ul>	



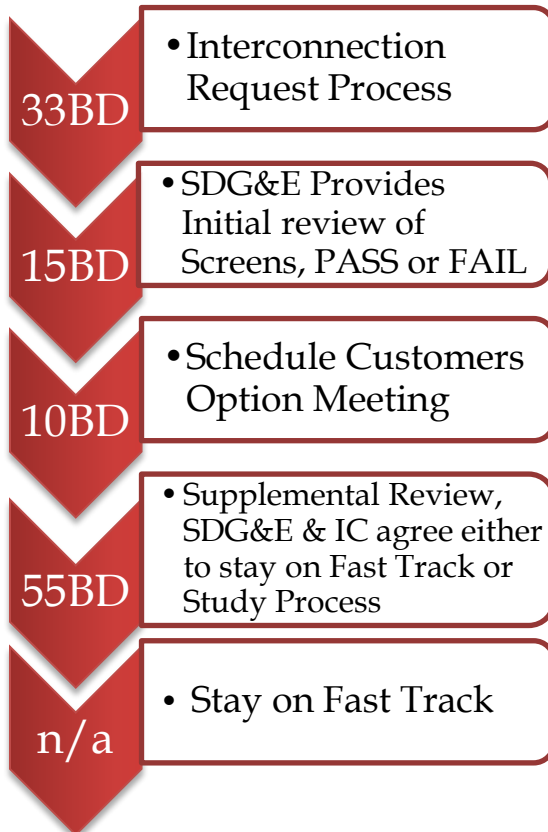
# Small Generator Interconnection Agreement (SGIA)

## SGIA - Small Generator Interconnection Agreement, ≤20MW

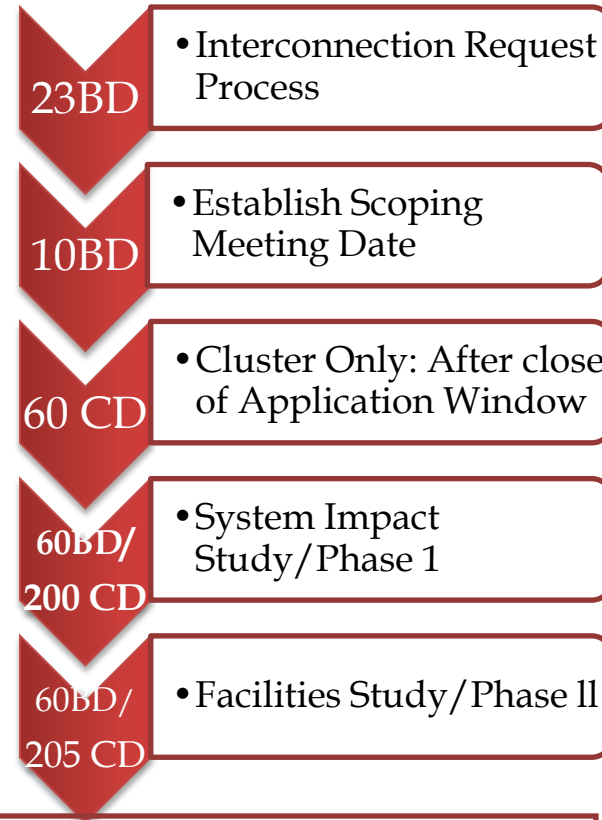
Process	Duration	Responsible Party
Following the Facilities Study/Phase II	30 CD	SDG&E
<ul style="list-style-type: none"> <li>• IC executes SGIA; or</li> <li>• IC fails to execute SGIA; or</li> <li>• IC has not requested to file unexecuted SGIA; or</li> <li>• IC has not initiated Dispute Resolution;</li> </ul> + Interconnection Request Deemed Withdrawn	120 CD	Interconnection Customer (IC)
		SDG&E
		SDG&E & IC

# Flow Charts & Timing

## *Fast Track*

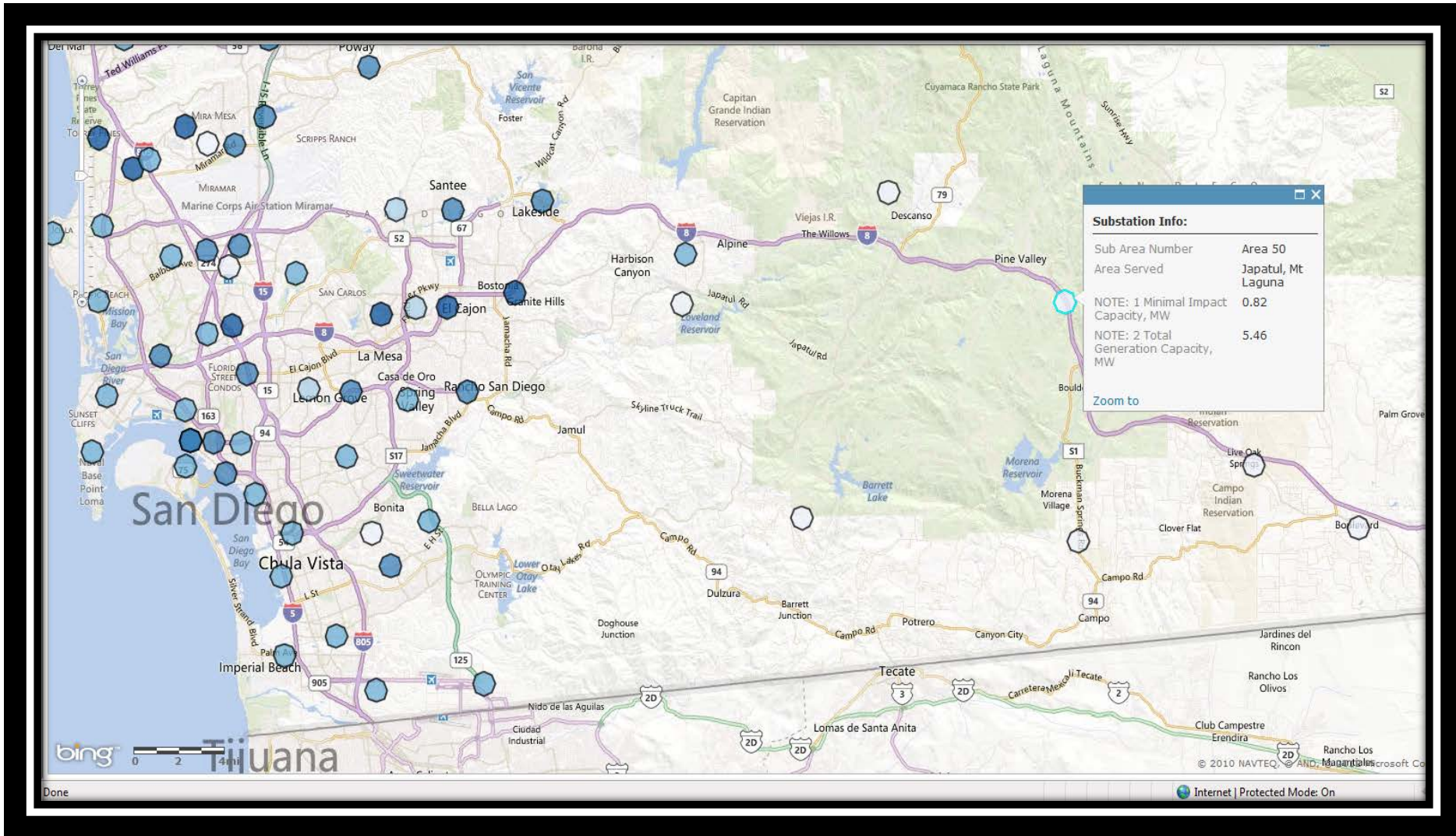


## *Study Process*



*Interconnection Agreement*

# Distribution Generation Interactive Map - Substation

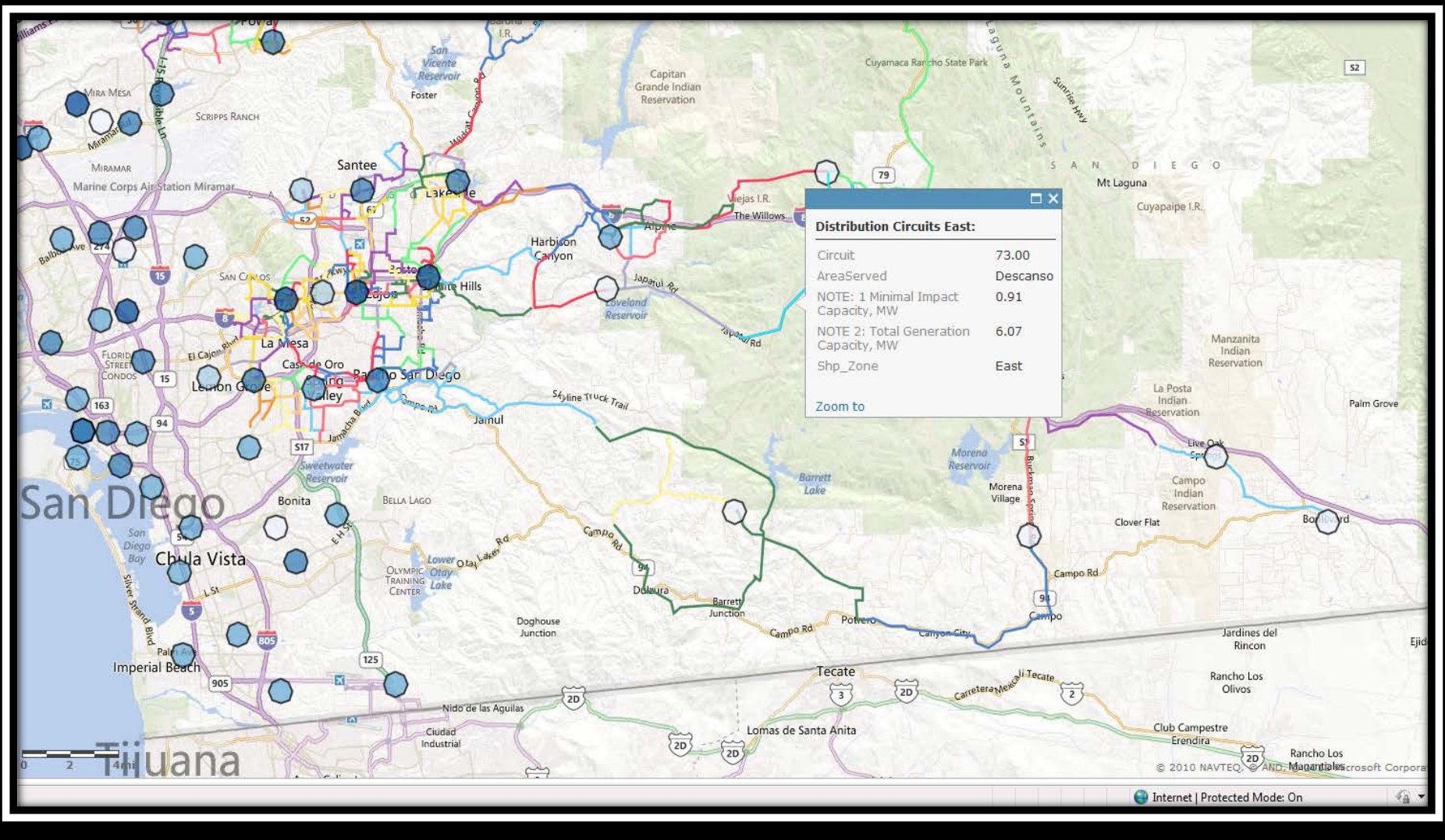


Registration form: <http://sdge.com/builderservices/dgmap/>

June 2014 RAM RFO: Bringing Renewable Energy to San Diego



# Distribution Generation Interactive Map - Circuit



Registration form: <http://sdge.com/builderservices/dgmap/>

## Contact Information

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Office: (858) 636-5581  
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[sdge.com/wdat](http://sdge.com/wdat)*

*Please submit your questions by*

*June 13, 2014*

*to*

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