



Local Capacity Requirements Request For Offers (“LCR RFO”) Energy Storage Webinar

Topic: LCR RFO Energy Storage Webinar
Date and Time: November 15, 2013 / 9:00AM – 10:30AM Pacific Prevailing Time
WebEx address: <https://sce.webex.com/sce/onstage/g.php?d=800839813&t=a>
WebEx Password: SCE
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Participant Code: 7835304



Energy Storage Overview

Rosalie Roth

(Senior Contract Originator, Energy Storage Product Lead)

Agenda

- ◆ **Overview (Rosalie Roth) 9:00AM - 9:10AM**
 - Scope of Webinar
 - What is the LCR RFO?
 - Key to this RFO
 - LCR Locations: West LA and Moorpark maps
 - Questions
- ◆ **Energy Storage Agreement (Bill Walsh) 9:10AM – 9:25AM**
 - ESA Overview
 - Purchase and Sale of Product
 - Compensation and Performance
 - Dispatch and Energy Management
 - Credit and Collateral
 - Questions
- ◆ **Valuation and Selection (Ranbir Singh) 9:25AM – 9:40AM**
 - Valuation and Selection Process
 - Typical Costs and Benefits
 - Market Price Forecasting
 - RA Benefit
 - Questions
- ◆ **ES Excel Appendix (Rosalie Roth) 9:40AM - 10:00AM**
 - Offer Information
 - Appendix Instructions
 - Front Page Tab
 - Offer Tab
 - Tab 1.01
 - Tab 1.02
 - Tab 9.02
 - Tab 9.04
 - Questions
- ◆ **Q&A Session 10:00AM – 10:25AM**
- ◆ **Closing (Rosalie Roth) 10:25AM – 10:30AM**
 - RFO Schedule
 - Qualified resources encouraged to participate
 - Keys to a successful proposal



Energy Storage Webinar Scope

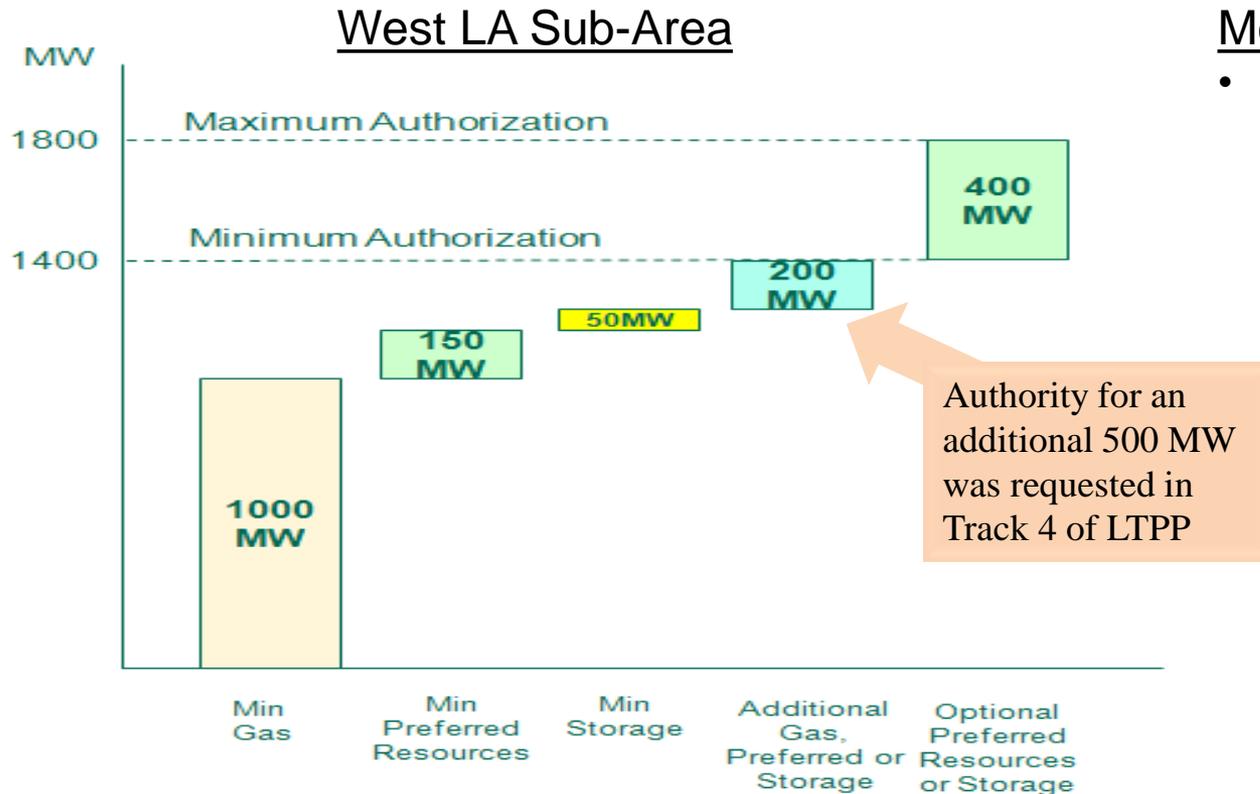
- **Focus on Energy Storage** product in SCE's LCR RFO, we will not be discussing other LCR RFO products, other SCE procurement programs nor the Energy Storage OIR procurement implementation
- This is a “deeper dive” of Energy Storage resource contracting and valuation
 - **We heard you!** – This webinar is a follow up to the October 2013 LCR RFO Bidders Conference
 - **This is new for us too!** - Energy Storage is a new procurement resource for SCE. We will share what we know at this point in the RFO process. We will know more about ES once we receive offers from the market
- Questions will be answered after each presentation segment and at the end
- Following this Webinar, ES Participants are encouraged to submit additional follow-up questions to LCR.RFO@SCE.com *and* Alan.Taylor@sedwayconsulting.com

LCR RFO Website

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>

What is the LCR RFO?

- To meet projected local capacity needs as a result of expected retirement of Once-Through-Cooling (OTC) generating units, D.13-02-015 orders SCE to procure the following new resources by 2021:



Moorpark Sub-Area:

- 215-290 MW in Ventura/Big Creek

Storage Opportunity is 50 MW to 650 MW+ if competitively priced

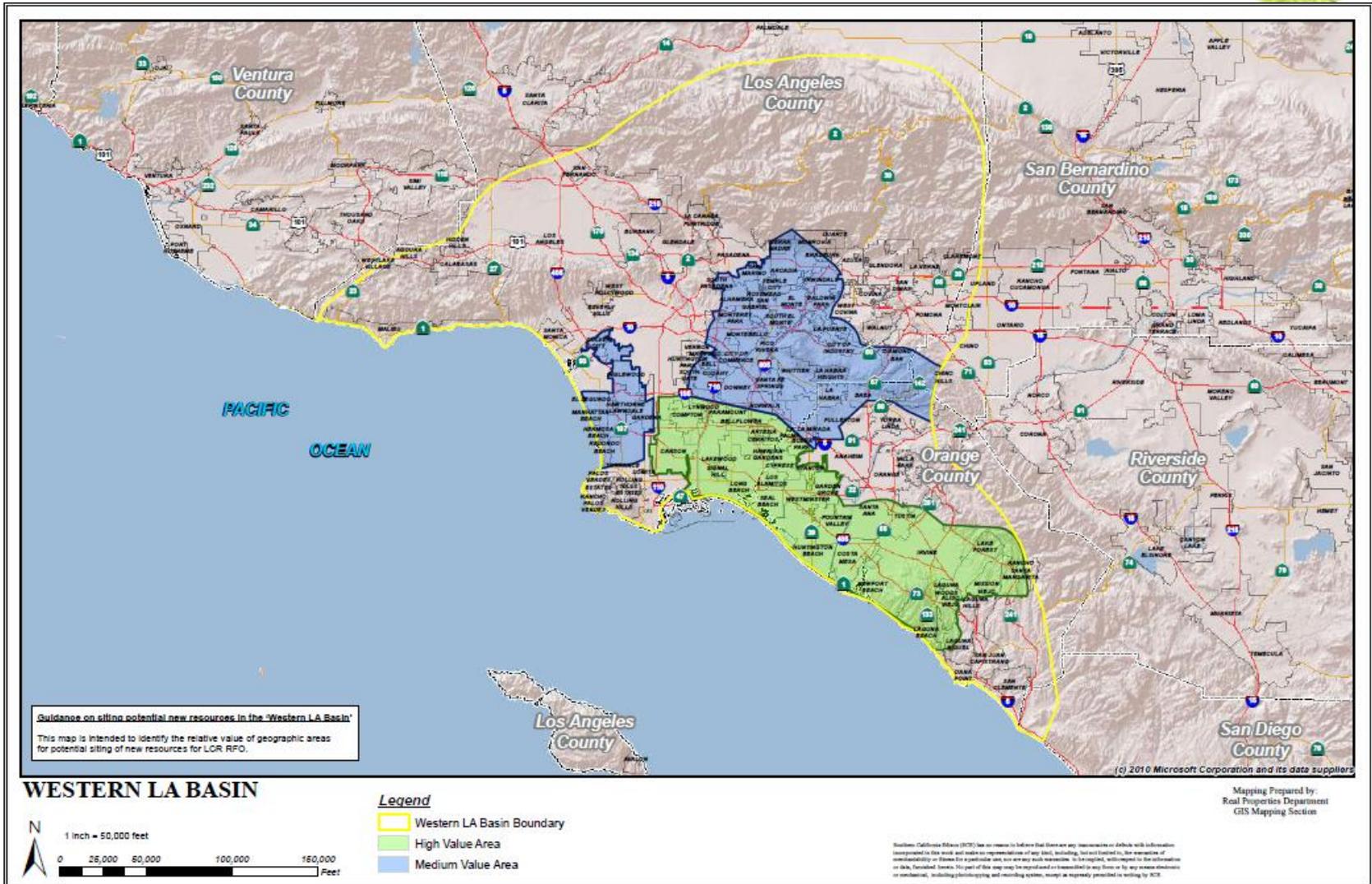
Key to this RFO

Location, Location, Location and Timing

- Capacity must be located in two specific sub areas in SCE's service territory: Western LA Basin and Moorpark
- Also, projects must provide new, incremental capacity for a 2021 need; thus, the delivery period must include the entire 2021 calendar year
- Contracts may start delivery as early as January 1, 2018, however contracts that interconnect at the Goleta, Johanna or Santiago substations (or interconnect to lower voltage substations that are connected to these substations) may start delivery as early as January 1, 2015
- “Energy storage system” means commercially available technology that is capable of absorbing energy, storing it for a period of time, and thereafter dispatching the energy¹

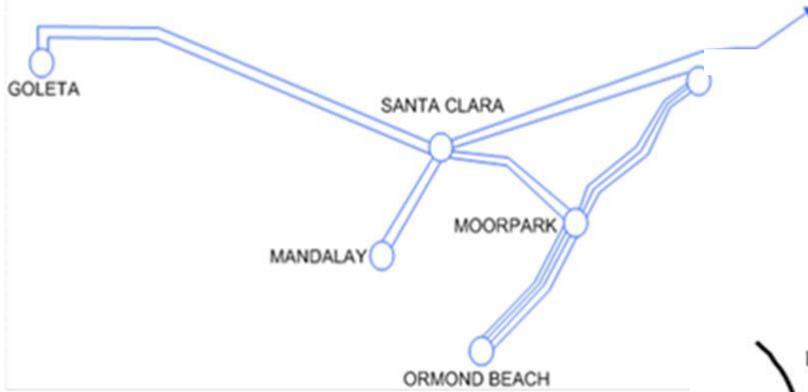
¹Assembly Bill (AB) 2514 (Stats. 2010, ch. 469) as implemented in Pub.Util. Code Section 2836 *et seq.*

LCR Location: West LA Basin Sub Area



LCR Locations: Substations

Moorpark Sub Area – 5 A-Bank Substations



West LA Basin Sub Area – 27 A-Bank Substations



Note: Maps not to scale, locations for illustrative purposes only

Document Conflicts

- This presentation is intended to be a focused discussion of the information and requirements established in the Energy Storage RFO Materials
- To the extent that there are any inconsistencies between the information provided in this presentation and the requirements established in the RFO Materials, the RFO Materials shall govern

Questions





Energy Storage Agreement

Bill Walsh

(Senior Attorney)

Energy Storage Agreement Overview

- The posted Energy Storage Pro Forma is intended to be used for storage projects that are interconnected in a manner similar to generation resources
- Sellers should consider the use of RA-only Agreement. Allows Seller to manage energy and entitles them to any revenues associated with energy sales
- It does not address projects or bids that are behind-the-meter, aggregate resources, or are hybrids
 - These types of offers will require modifications to SCE’s other pro formas
 - As a matter of general guidance:
 - Behind-the-meter offers should consider marking up and using SCE’s demand response pro forma; although, it is likely that SCE will add project development provisions to this agreement
 - Aggregate offers should mark-up the Energy Storage pro forma
 - Hybrid offers should mark-up the pro forma of the “dominant” technology and the technology specific provisions of the “subordinate” technology

The guidance provided is not intended to limit the types of offers submitted. If the current pro formas do not work, SCE will work with bidders to develop an appropriate form of agreement.



Purchase and Sale of Product

Term, Conditions Precedent, Delivery Period

- Seller conveys, and SCE has the exclusive rights to, the product (i.e., energy, A/S, capacity, RA benefits)
- Capacity – Seller provides an expected contract capacity. For the delivery period, this quantity is ultimately adjusted based on the initial commercial operation test
- CPUC Approval
 - Must be obtained within 365 days, otherwise the parties have a mutual termination right
 - If terminated, no termination payment and return of development security
- Initial delivery date occurs, and the start of the delivery period begins, after the satisfaction of certain criteria (list is not exhaustive):
 - Achieve commercial operation
 - PGA, MSA, etc. are in place
 - SCE authorized as SC
 - Project is fully deliverable
 - CPUC Approval
- Delays in achieving the initial delivery date are permitted through the payment of daily delay damages – max 365 days @ (\$123.29/MW *capacity / per day)
- Delays also permitted for force majeure without the payment of damages; provided, the initial delivery date must occur within 365 days of the expected date

Compensation and Performance



- Compensation
 - Monthly Capacity Payment
 - Variable O&M Charge
 - Variable O&M Adjustment Payment – Seller provides a max and min guaranteed efficiency rate (i.e., how much of the energy drawn off the grid is available for discharge). If the actual efficiency is greater or less than the tolerance band, then a payment will be made to the seller for efficiency improvements, or a payment will be made by the seller for efficiency shortcomings
- Monthly Capacity Payment can be reduced based on a number of performance factors
 - Availability -- is the unit capable of charging and discharging. If unit is less than 100% available, then the capacity payment is reduced
 - A/S Availability -- is the unit capable of providing A/S services. If unit is less than 100% available, then the capacity payment is reduced
 - Energy Efficiency Capacity Payment Reduction – similar to Variable O&M Adjustment Payment in that reductions are based on whether actual efficiency falls within max and min performance tolerance band. However, there is no adjustment up for units that perform above the tolerance band
- Monthly Capacity Payment
 - 25% Availability
 - 25% A/S Availability
 - 50% Energy Efficiency

Dispatch and Energy Management

- SCE responsible for managing, purchasing, scheduling, and transporting all of the storage unit's charging requirements*
 - With certain limited exceptions, SCE responsible for the cost of charging unit
 - SCE has full charging and discharging control of the unit
- SCE acts as scheduling coordinator for the storage unit
 - Seller provides daily availability notices
 - SCE will provide dispatch and charging notices
- Seller holds energy for the benefit of SCE
 - Title, possession and risk of loss transfers at the energy delivery point (typically the bus bar)
- Energy for station use is the responsibility of Seller and must be separately metered

All dispatches, charging, cycling, etc. are subject to the operating restrictions in the agreement

Credit and Collateral



- Delivery Date Security
 - Held prior to the initial delivery date
 - 50% due shortly after execution, 50% due shortly after CPUC approval
 - \$45/kW
 - Daily delay damages drawn from delivery date security
 - Form of cash or letter of credit

- Performance Assurance
 - Held during the delivery period
 - Fixed amount equal to 10% of the lesser of (i) 36 months, or (ii) the number of remaining months in the term, worth of capacity payment
 - Form of cash or letter of credit

Questions





Valuation and Selection

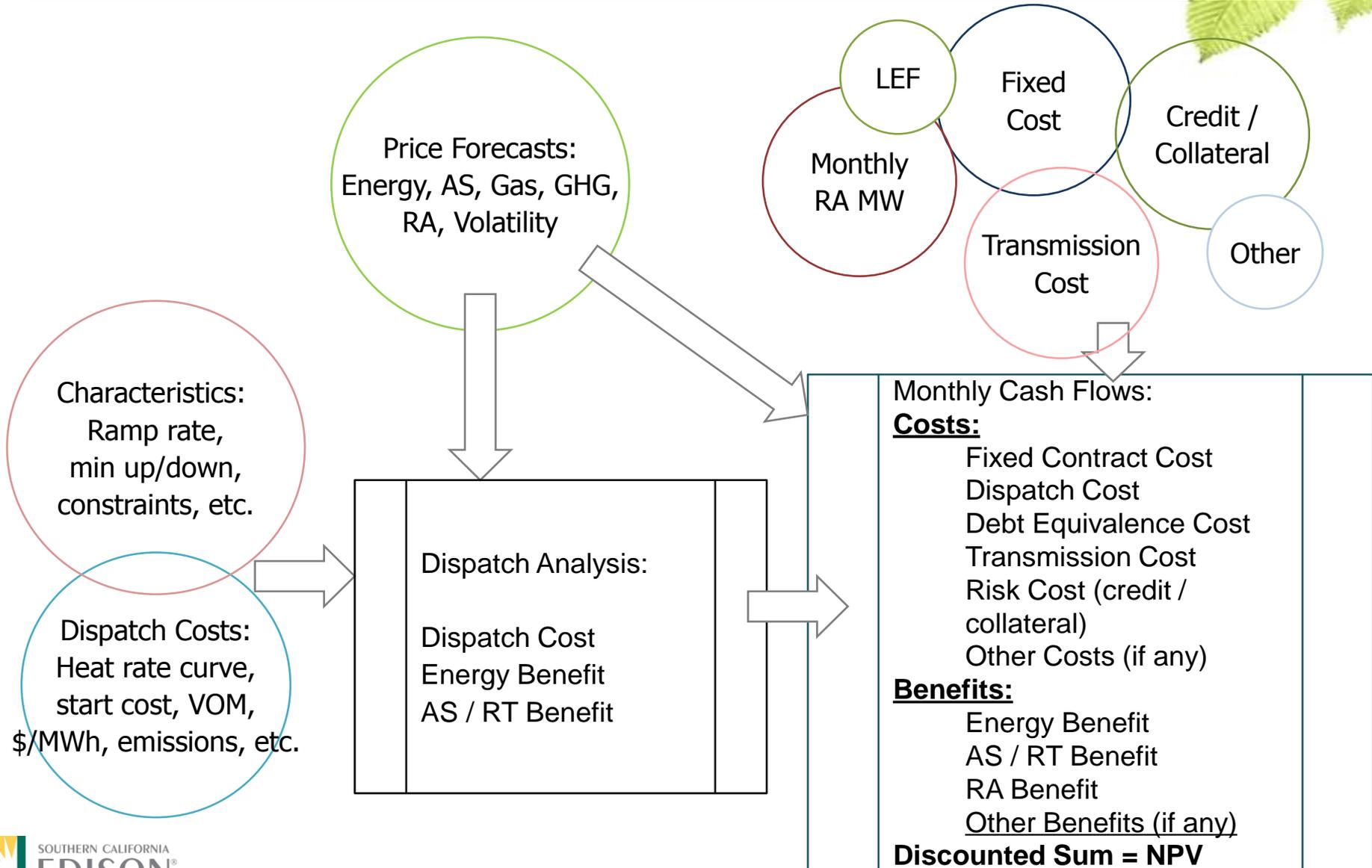
Ranbir Singh

(Portfolio Valuation Manager)

Valuation & Selection Process

- SCE incorporates “Least-Cost, Best-Fit” principles by accounting for quantifiable attributes explicitly in the valuation process (“Least-Cost”) while qualitative attributes are accounted for implicitly in the selection process (“Best-Fit”)
- Value each offer using discounted cash flow analysis (described in detail later)
- After the valuation process generates a Net Present Value (NPV) for each offer, SCE runs an optimization exercise to develop possible selection sets

Valuation Process





Summary of Typical Costs and Benefits For Resource Types

Resource Type	Benefits			Costs					Benefits / Costs
	Energy	Ancillary Services / Real Time	RA Capacity	Dispatch	Contract Payments	Debt Equivalence	Transmission	GHG Compliance	Other*
CHP	✓		✓	✓	✓	✓	✓	✓	✓
Dispatchable CHP	✓	✓	✓	✓	✓	✓	✓	✓	✓
Conventional Gas	✓	✓	✓	✓	✓	✓	✓	✓	✓
Renewable	✓		✓	✓	✓	✓	✓		✓
DR	✓		✓	✓	✓	✓			✓
EE	✓		✓		✓	✓			✓
Storage	✓	✓	✓	✓	✓	✓	✓	✓	✓
RA Tag			✓		✓	✓	✓		✓

*Examples of Other Benefits/Costs includes: distribution deferral, fixed access charges for fuel, credit/collateral adders



Market Price Forecasting

- Power Prices
 - SP15 for LCR
 - Locational price differentials may be applied where appropriate
 - Day-ahead / real-time variations
 - Long term forecast derived from a blend of market and fundamental models
- Ancillary Services Prices
 - Spin, non-spin and regulation (no black start value)
 - Fundamental impacts including (but limited to) increasing amounts of intermittent generation are captured in AS market price projections
- Natural Gas Prices
 - A blend of market and consultant outlooks
 - Location specific (SoCal, Kern, etc.)
- GHG Prices
 - A blend of market and consultant outlooks

Resource Adequacy Benefit

- Projects must apply or have applied for interconnection to the CAISO grid selecting Full Capacity Deliverability Status (FCDS), qualifying the project to be counted for Resource Adequacy (RA)
- Energy Storage RA
 - Current RA rules require that qualifying resources must be able to run for a minimum of four hours per day for three consecutive days
 - Dispatchable, supply side contracts will be based on the contractual RA MW
 - Behind-the-meter will be treated as DR
- Locational effectiveness factors may affect the project's RA MW used in the valuation
 - Draft example: Highest LEF = 50%, project's LEF = 40%, RA MW valuation multiplier = 90% ($1 - (0.5 - 0.4)$)
 - Will utilize the most recent LEFs published by CAISO

Questions





ES Excel Appendix

Rosalie Roth

(Senior Contract Originator, Energy Storage Product Lead)



Offer Information

- Once Offers are received, SCE begins an initial review for completeness and conformity. The offers will be initially screened for required submission criteria
 - Conforming delivery point
 - Minimum project size (500 kW)
 - Submission of completed forms
 - Offers lacking any of these items are allowed a reasonable cure period
 - We will work directly with Sellers to resolve any issues
- Due to the many ES technologies, it is difficult to develop a one-size-fits-all set of forms
- The Appendices were developed for dispatchable “in-front-of-the-meter” applications
- Information provided by the Seller will be used for screening and valuation
- We ask that you fill in all requested information to the extent it fits with your project
- If the requested information is not applicable to your project, we would appreciate a description of the proposed facility and any limitations

Appendix - Instructions

- ESA Appendices can be found on the RFO website, click on "Documents" pop down
- ESA Appendices Workbook contains 7 tabs
 - Instructions
 - Front Page
 - OFFER
 - 1.01
 - 1.02
 - 9.02
 - 9.04
- Read the instructions page before filling in the other tabs

Energy Storage Agreement Excel Appendices Instructions

Color/Pattern Codes

Space to type in required Information	Formula / For SCE Use Only
Select from a drop-down box	Data is out of range or missing

SCE Excel Appendices: PPA

Tab Names:	Required Information
Instructions	Offers
Front Page	n/a
OFFER	Required
1.01	Required
1.02	Required
9.02	Required
9.04	Required

Notes:
 File should be opened and completed using Excel 2010
 Please fill out all data in units requested.

Workbook Instructions

- Complete each worksheet of the entire workbook
- Each Storage Unit will require a separate workbook (Excel file)

I. Counterparty Identification - "Front Page" tab

(a) Seller Name – Seller must enter the name of the Counterparty consistent with the name in the "Front Page" tab (Cell A23).

Instructions
Front Page
OFFER
1.01
1.02
9.02
9.04

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>



Appendix - Front Page

- All cells shaded in beige need to be filled in by Seller
- On this page you will enter:
 - Name of Seller
 - Name of ES unit
 - Date of file creation/update
 - Offer number (x out of y)
- Other shaded cells will populate automatically
 - Yellow – pop down selection
 - White – formula/SCE use
 - Red – data out of range or missing

INDICATIVE OFFER			
EXCEL APPENDICES for ENERGY STORAGE AGREEMENT between SOUTHERN CALIFORNIA EDISON COMPANY and			
[Seller Name]			
Energy Storage Unit Name:			
CAISO Resource ID:	TBD		
File Update Date:			
CPID:			
UNIT ID:			
Offer Number		out of	

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>

Appendix - Offer

- A. Delivery Period
 - Start date
 - End date

- B. Contract Capacity
 - MW amount will populate from capacity number entered in Tab 1.01
 - This capacity amount will be used for RA planning

- C. Capacity Prices
 - Enter Contract Capacity Price (\$/kW month) here



SOUTHERN CALIFORNIA
EDISON

An EDISON INTERNATIONAL Company

OFFER TEMPLATE:
LCR Energy Storage
Request for Offers
Confidential

INDICATIVE OFFER

Offer Name:

Storage Unit Name:

Facility Type:

Unit ID:

Offer Number:

A. DELIVERY PERIOD

Delivery Period Start Date:	1/1/2018
Delivery Period Length:	132
Delivery Period End Date:	12/31/2028

B. CONTRACT CAPACITY

Energy Storage Contract Capacity as they will appear in the ESA, Section 1.01.

Month	Expected Monthly RA Capacity (same as Contract Capacity) (MW)
January	0.00
February	0.00
March	0.00
April	0.00
May	0.00
June	0.00
July	0.00
August	0.00
September	0.00
October	0.00
November	0.00
December	0.00

C. CAPACITY PRICES

Please fill out the following table with Capacity Prices as it will appear in the ESA, Section 9.02

Year	Energy Storage Contract Capacity Price (\$/kW-month)
2018	
2019	
2020	
2021	
2022	
2023	
2024	
2025	
2026	
2027	
2028	

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>



Appendix – 1.01 Part A, B, and C

- Tab 1.01 requires the following information about the ES unit
 - Technology description
 - A. Expected Contract Capacity (MW)
 - B. Total Unit Dispatchable Range
 - C. Power Acceptance, SOC and Cycle limitations
 - A “Cycle” is charging and discharging a SU from S_Min to S_Max and back to S_Min

INDICATIVE OFFER						
APPENDIX 1.01						
CAPACITY AND ANCILLARY SERVICES OPERATING RESTRICTIONS						
[Energy Storage Product only]						
<i>Seller provides the following information:</i>						
Technology: <input style="width: 60%; border: 1px solid black;" type="text"/>						
This information is for one storage unit. If the offer consists of more than one energy storage unit, please complete a separate form for each unit.						
Page Update Date	<input style="width: 95%; border: 1px solid black;" type="text"/>					
Storage Unit Name	<input style="width: 95%; border: 1px solid black;" type="text"/>					
A. Contract Capacity						
A.1 Expected Contract Capacity (MW):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
B. Total Unit Dispatchable Range Information						
Maximum Storage Level S_max (MWh):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
Minimum Storage Level S_min (MWh):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
Max Discharge (MW):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
Guaranteed Efficiency Factor Max (GEF ^{max}) (%):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
Guaranteed Efficiency Factor Min (GEF ^{min}) (%):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
Time from S_min to S_max (hours):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
Unit Life (Years if applicable):	<input style="width: 95%; border: 1px solid black;" type="text"/>					
C. Power Acceptance, State of Charge and Cycle Limitations						
				Cycle Limitations	Restricted or Unrestricted	If Restricted, Number of Cycles*
Power Acceptance vs SOC (State of Charge)	SOC_1	SOC_2	SOC_3	Maximum Daily Cycles	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>
SOC (% from Smallest to Largest SOC)	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>	Maximum Weekly Cycles	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>
Power Acceptance (MW)	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>	Maximum Monthly Cycles	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>
Power Discharge Maximum (MW)	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>	Maximum Annual Cycles	<input style="width: 100%; border: 1px solid black;" type="text"/>	<input style="width: 100%; border: 1px solid black;" type="text"/>
* A "Cycle" is charging and discharging a Storage Unit from S_Min to S_Max and back to S_Min.						

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>



Appendix – 1.01 Part D and E

- Tab 1.01 also has space to provide the following info about the ES unit
 - D. Ancillary Services
 - Note: we are asking for Reg up/down and Spin/Non spin ranges and ramps for the same configuration
 - E. Here is where you can add more information about the ES unit
 - Important: If more than one unit in the Storage Project, complete a separate form for each

INDICATIVE OFFER										
APPENDIX 1.01										
CAPACITY AND ANCILLARY SERVICES OPERATING RESTRICTIONS										
[Energy Storage Product only]										
D. Ancillary Services: Note that a single configuration may have multiple Reg up/down or Spin/Non spin ranges and ramps										
Ancillary Services are included: <input style="width: 100%;" type="text"/>										
Time Duration for Start-Up (minutes): <input style="width: 100%;" type="text"/>										
	Regulation Up					Regulation Down				
Configuration Number	Lower MW	Higher MW	Regulation Ramp Rate (MW/min)	A/S Maximum Capacity (MW) [1]	A/S Minimum Capacity (MW)	Lower MW	Higher MW	Regulation Ramp Rate (MW/min)	A/S Maximum Capacity (MW) ⁽¹⁾	A/S Minimum Capacity (MW)
	Spinning Reserve					Non Spinning Reserve				
Configuration Number	Lower MW	Higher MW	Operating Reserve Ramp Rate (MW/min)	A/S Maximum Capacity (MW) ⁽¹⁾	A/S Minimum Capacity (MW)	Lower MW	Higher MW	Operating Reserve Ramp Rate (MW/min)	A/S Maximum Capacity (MW) ⁽¹⁾	A/S Minimum Capacity (MW)
E. Any additional restrictions that cannot be covered in the input tables in Appendix 1.01										

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>

Appendix – 1.02

- Tab 1.02 requires a description of the ES unit
 - A. Storage Unit Details
 - Note: Must be located in the CAISO SP15 Zone
 - B. Storage Unit Specifications
 - Important: If more than one unit in the Storage Project, complete a separate form for each

INDICATIVE OFFER

APPENDIX 1.02
DESCRIPTION OF STORAGE UNITS

Seller provides the following information:

This information is for one storage unit. Please complete a separate form for each unit.

Page Update Date:

Storage Unit Name:

A. Storage Unit Details	
Storage Unit:	<input type="text"/>
Site Address:	<input type="text"/>
Existing Zone:	SP15
B. Storage Unit Specifications	
Storage Unit Technology:	<input type="text"/>
Primary Storage Fuel Type:	<input type="text"/>
Prime Mover Technology:	<input type="text"/>
Configuration:	<input type="text"/>
Rated Power Capacity:	<input type="text"/>
CAISO Resource ID:	TBD
Air Pollution Control District:	<input type="text"/>
California Air Resources Board ID #:	<input type="text"/>
Resource Category:	<input type="text"/>
Local area reliability region:	<input type="text"/>
Deliverability restrictions:	<input type="text"/>
Is the Company a WMDVBE?:	<input type="text"/>
Interconnection Queue Number:	<input type="text"/>

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>

Appendix – 9.02

- Tab 9.02
 - Shows the Delivery Period and Monthly Capacity Payments
 - Applies to Final Offers
 - Included in Indicative Excel Appendices for Illustrative purposes
 - Unlike conventional GFG, ES is assumed to have a flat price shape as shown in Part B

INDICATIVE OFFER										
APPENDIX 9.02										
DELIVERY PERIOD AND MONTHLY CAPACITY PAYMENT										
<i>Please provide the following information:</i>										
This information is for one storage unit. Please complete separate forms for each unit.										
Page Update Date:										
Special Offer Description:	Energy Storage Offer									
Storage Unit Name:										
CAISO Resource ID:	TED									
A. Monthly Capacity Price Information										
	Expected Initial Delivery Date	Contract Year End Date	Monthly Capacity Price [1]	Contract Capacity (MW)						
[1] Monthly Capacity Price expressed in whole dollars and cents.										
B. Monthly Payment Price Shape										
Month	RA	Energy	AS							
January	100%	100%	100%							
February	100%	100%	100%							
March	100%	100%	100%							
April	100%	100%	100%							
May	100%	100%	100%							
June	100%	100%	100%							
July	100%	100%	100%							
August	100%	100%	100%							
September	100%	100%	100%							
October	100%	100%	100%							
November	100%	100%	100%							
December	100%	100%	100%							
[2] Price shape is determined based on the Storage Unit, these values are contained in the LCR RFO Instructions.										
C. Monthly Capacity Payment (\$) (This section is non-binding and provided for informational purposes only. Actual values will be determined by the market clearing process.)										
Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
January	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
February	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
March	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
April	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
May	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
June	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
July	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
August	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
September	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
October	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
November	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
December	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Month	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
January	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
February	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
March	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
April	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
May	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
June	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
July	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
August	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
September	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
October	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
November	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
December	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

For illustrative purposes only; this sheet will be filled out upon final execution of a PPA.



Appendix – 9.04

- Tab 9.04
 - Variable O&M Charge
 - Enter VOM charge (\$/kWh)
 - Possible to vary charge annually
 - Important: If more than one unit in the Storage Project, complete a separate form for each

INDICATIVE OFFER		
APPENDIX 9.04 VARIABLE O&M CHARGE <i>Seller provides the following information:</i> This information is for one storage unit. Please complete a separate form for each unit.		
File Update Date:	<input style="width: 100%;" type="text"/>	
Storage Unit Name:	<input style="width: 100%;" type="text"/>	
A. Variable O&M Charge Information		
Figures are to be inputted to the one-hundredth level of precision. Please enter all figures to two decimal places.		
Contract Year Start Date	Contract Year End Date	Variable O&M Charge (\$/MWh)

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>

Questions



Additional Questions? Email:

LCR.RFO@SCE.com *and*

Alan.Taylor@sedwayconsulting.com

LCR RFO Schedule

Timeline	Event
September 12, 2013	RFO documents issued
December 2, 2013 5:00 PM PPT	Deadline to submit Non-binding Notice of Intent to Offer
December 16, 2013 5:00 PM PPT	Deadline to submit Indicative Offer and completed Offer Submittal Package
January 30, 2014	Shortlist notification
May 22, 2014	Deadline to complete negotiations of Agreement(s)
May 29, 2014 5:00 PM PPT	Deadline to submit Final Offer
June 26, 2014	Last date for notification of successful Offers and to sign Agreements

<https://www.sce.com/wps/portal/home/procurement/LCR-RFO/>



All Qualified Resources are Encouraged to Participate

- The LCR RFO is a complex and challenging solicitation that is open to all LCR technologies
- We seek a balanced approach to meeting or reducing the future needs of the system
- SCE hopes for robust competition in all resource “buckets”
- SCE encourages open, constructive, and creative dialogue with market participants to meet the LCR needs
- SCE recognizes that the published *Pro Formas* will not work for every offer. We are prepared to work with counterparties to develop appropriate contracts after initial offers are received



Keys to a Successful Proposal

- Read, understand and follow instructions
- Know deadlines and what is expected
- If you have any questions at all, contact the LCR RFO team
- After shortlisting, work with assigned SCE Contract Manager to identify and resolve larger issues first
- Be flexible and work with SCE on your proposals – this is new for us too!



Back-up Slides

Supplier Diversity; Potential Funding for Development Security

Supplier Diversity

- SCE encourages Women-Owned, Minority-Owned, and Disabled Veteran-Owned Business Enterprises (“WMDVBE”) to participate in the LCR RFO
- CPUC General Order 156 sets the rules governing the development of programs to increase participation of WMDVBEs in procurement of contracts from utilities as required by CPUC Code
- For additional information, please visit SCE’s website, www.sce.com/SD
 - Guidance is also available at www.sce.com/EnergyProcurement under the heading “Help & Guidance”
 - Contact Cristina Radu at 626-302-3412 or cristina.radu@sce.com regarding power procurement opportunities and activities

Potential Funding for Development Security

- Offers associated with the Hopi Tribe and/or Navajo Nation that qualify under the requirements of D.13-02-004 may be entitled to use available funds from the Mohave SO₂ Revolving Fund to meet the development security obligations under the LCR Renewable PPA, subject to the provision of the necessary documentation and assurances in the final agreement

LCR RFO Documents

Document Name	What is it?	When is it due?
RFO Instructions	SCE created instructions that specify products to be solicited, eligibility requirements, process and evaluation overview	For Bidder information only
CEC's California Power Plants Database / Energy Facility Status Report, RFO Definitions	Assists in determining what facilities will be deemed "new" and complements all RFO Materials	For Bidder information only
Notice of Intent	Non-binding indication of products that bidder intends to submit offers for – assists SCE in planning	Due by 12/2/13 5PM PPT
Offer Sheet	Contains Bidder and Offer information - must be filled out in its entirety and submitted as part of Bidder's Indicative Offer	Due by 12/16/13 5PM PPT
Various Purchase Agreements	SCE's proposed agreements to start negotiations with Gas Fired, Combined Heat & Power, Demand Response, Energy Efficiency, Energy Storage and Renewable projects	Any proposed redlines to Agreements due by 12/16/13 5PM PPT
Various Excel Appendices	Data files meant to capture numerical information (e.g. operating characteristics, pricing) – complements purchase agreements	Due by 12/16/2013 5PM PPT and refreshed by 5/29/14 5PM PPT

SCE Proposed Purchase Agreements

- SCE has created Purchase Agreements designed to handle most potential contracting situations

Document	Used for
Demand Response	Demand Side Management project that is dispatchable, resulting in a temporary drop in load
Energy Efficiency	Demand Side Management project that results in permanent drop in load (not dispatchable)
Renewable	Generation facilities that are powered by an eligible renewable resource
Energy Storage	Generation facilities whose primary function is to store energy from the grid for delivery back to the grid at a later time
Combined Heat and Power	Generation facilities that are powered by natural gas but where dispatchability is limited due to a requirement to serve a host process
Gas Fired	Generation facilities that are powered by natural gas and are dispatchable
Resource Adequacy	Generation facilities (any of the above mentioned generation technologies) where the only stream of revenue Seller wants is for Resource Adequacy

- However, SCE understands that some solutions may not fit precisely into these formats, and bidders are able to provide redlines with indicative offer submittals

Useful Links

The CAISO Tariff can be found on the CAISO website at:

<http://www.caiso.com/pubinfo/tariffs/index.html>

- CAISO's CLGIP is Appendix Y to the CAISO Tariff
- CAISO's SGIP is Appendix S to the CAISO Tariff

SCE's WDAT and interconnection requirements for wholesale generation can be found at: <http://www.sce.com/AboutSCE/Regulatory/openaccess/>

- SCE's CLGIP is Attachment H to the WDAT
- SCE's SGIP is Attachment G to the WDAT

Interconnection Handbook, Wholesale Generators

<http://www.sce.com/AboutSCE/Regulatory/openaccess/>