



# Local Capacity Requirements Request For Offers BIDDERS CONFERENCE

Hosted by Southern California Edison  
October 16, 2013  
Pacific Palms Resort

**Topic:** SCE LCR RFO  
**Date and Time:** October 16, 2013 / 1:00PM – 5:00PM Pacific Daylight Time  
**WebEx address:** <https://sce.webex.com/sce/onstage/g.php?t=a&d=809232277>  
**WebEx Password:** SCE  
**Dial In:** Domestic: 1-800-857-9872 International: 1-312-470-0184  
**Participant Code:** 7262185



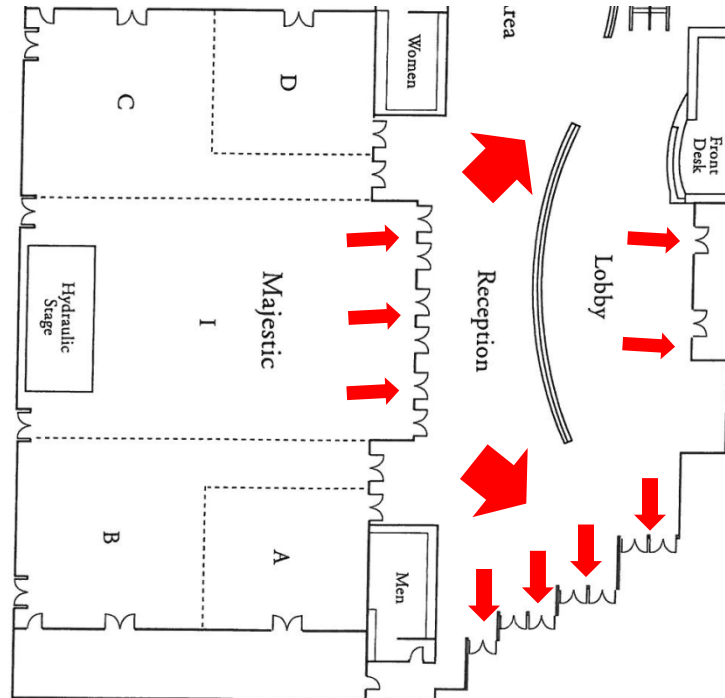
# Bidders Conference Overview

**Jesse Bryson**

**(Contract Origination Manager)**

# Safety Moment: EMERGENCY EVACUATION

In the event of an emergency, exit the **rear doors** of the ballroom to the lobby area and exit the doors to the south parking lot.



# Agenda

- ◆ **Overview (Jesse Bryson) 1:00PM - 1:30PM**
  - Conference Scope
  - What is the LCR RFO?
  - LCR Locations: West LA and Moorpark
  - Qualified resources encouraged to participate
  - Keys to a successful proposal
  - Meet the Team
  - Independent Evaluator
  - Supplier Diversity
- ◆ **RFO Materials (Gene Lee) 1:30PM – 2:15PM**
  - RFO Schedule
  - LCR RFO Documents
  - RFO Instruction
  - Offer Sheet
  - Purchase Agreements
  - Security Posting Requirements
- ◆ **BREAK 2:15PM – 2:30PM**
- ◆ **Valuation and Selection (Ranbir Singh) 2:30PM – 3:00PM**
  - Valuation and Selection Process
  - Typical Costs and Benefits
  - Selection - Comparison With Resource Buckets
  - Dispatch Analysis
  - Market Price Forecasting
  - RA Benefit
  - Transmission and DE Costs
  - Collateral
- ◆ **Interconnection Service (Drew Brabb) 3:00PM – 3:30PM**
  - PPA & IA Basics
  - Interconnection Process: Dynamic For a Reason
  - Pre-Agreement Studies
  - Active Interconnection Projects
  - Clustering and the Interconnection Process
  - Reformed Interconnection Process
  - SCE's Cluster Interconnection Process
  - Interconnection Agreement Target Timeline
- ◆ **Q&A Session 3:30PM – 4:00PM**
- ◆ **One-on-One Sessions and Networking 4:00PM – 5:00PM**
  - WMBDVE One-on-Ones
  - Hopi Tribe and Navajo Nation Mohave One-on-Ones

SCE team members will be available after the conference to talk with you

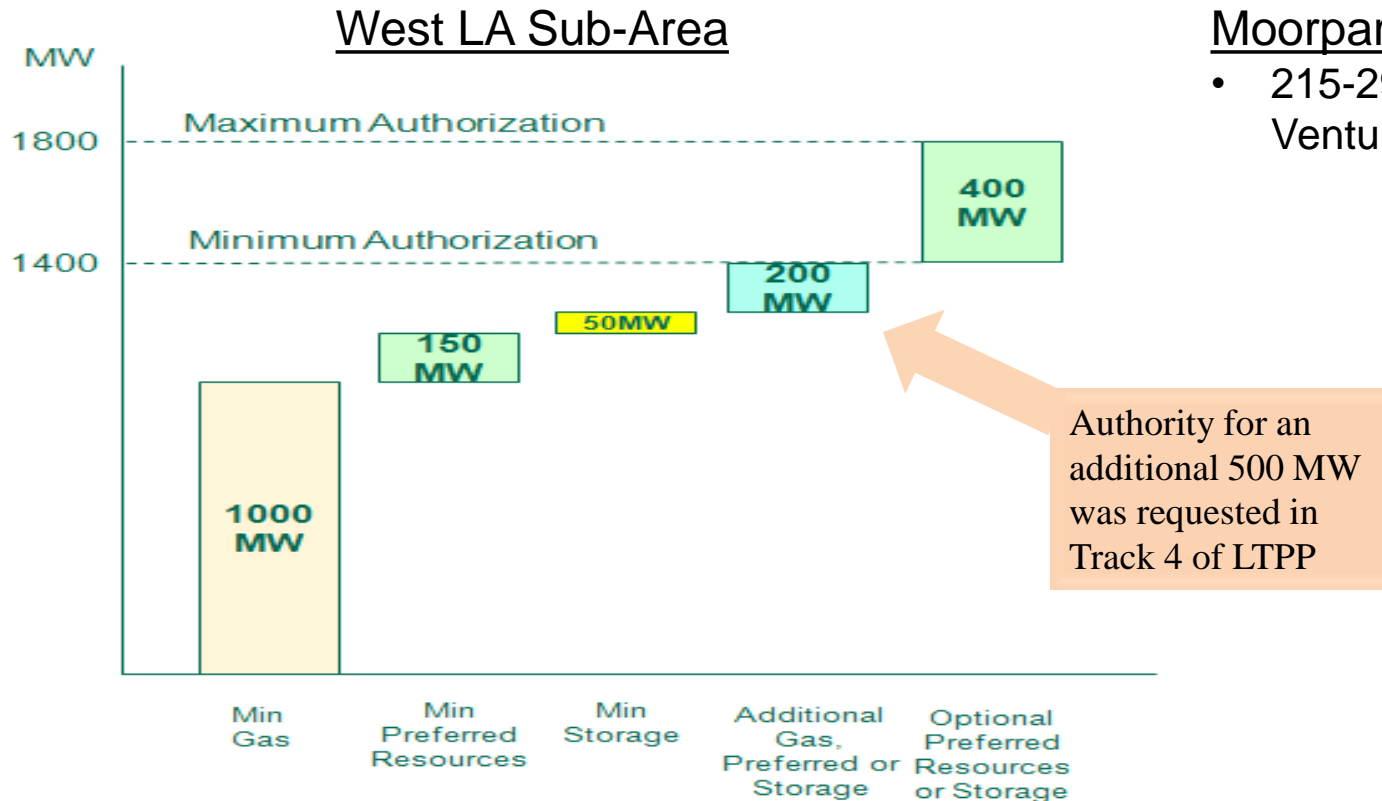
# Bidders Conference Scope

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- Focus on SCE's LCR RFO, we will not be discussing other SCE procurement programs
- SCE will not be doing a “deep dive” of resource type contracting or valuation, and will try to stay away from too many specific questions on a single technology type
  - Bidders Conference participants from a wide array of resource types
  - Focusing on single technology type could take entire afternoon
- SCE employees will be available during the post-conference networking session to answer additional questions

# 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:



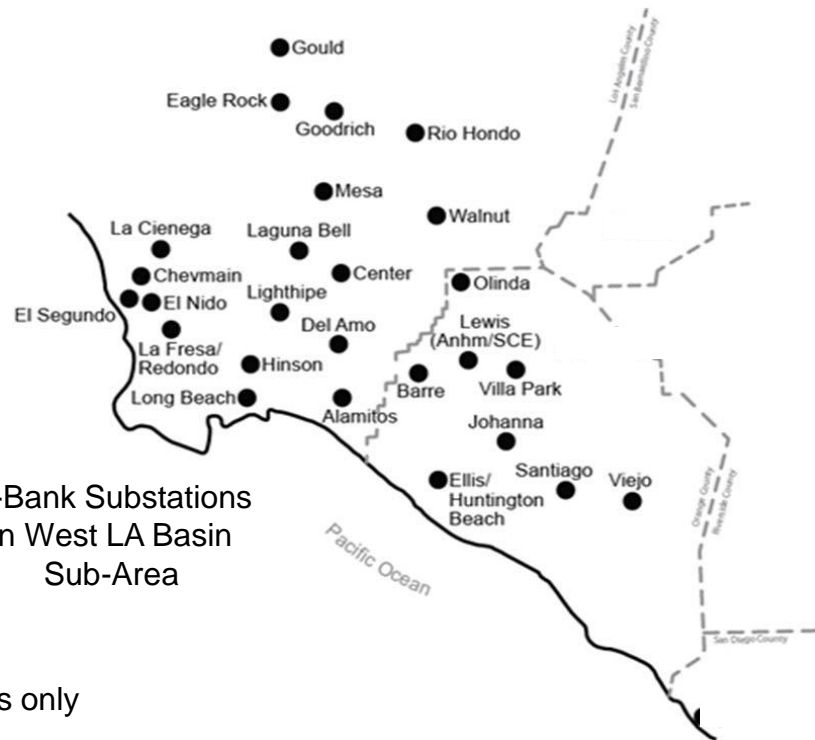
Moorpark Sub-Area:

- 215-290 MW in Ventura/Big Creek

# LCR Locations: West LA and Moorpark Sub-areas



A-Bank Substations in Moorpark Sub-Area



A-Bank Substations in West LA Basin Sub-Area

\* Not to scale and locations for illustrative purposes only

## All Qualified Resources Encouraged to Participate

- The LCR RFO will be a complex and challenging solicitation that is open to all LCR technologies
- We hope for a balanced approach to meeting or reducing the future needs of the system
- SCE is hoping 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 and is prepared to work with counterparties to develop appropriate contracts



# Keys to a Successful Proposal

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- 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!

# Meet The Team You Will Be Working With

## Project Manager

Amir Angha  
Dahlia Canter

## Valuation

Colin Cushnie  
Ranbir Singh  
Mike Borghi

## DSM

Andrea Horwatt

## Energy Storage

Mark Irwin

## Contract Origination

Steven Eisenberg (VP of Energy Contracts)

Jesse Bryson (Manager of Contract Origination)

Origination Team: Gene Lee (lead), Wilson Co, Dan Chase, Erica Darplee, Esyah Huynh, David Lewry, Cristina Radu, Rosalie Roth, Dan Walker, George Wiltsee, Benny Wu

## Legal

Bill Walsh  
Shane Noworatzky

## Independent Evaluator

Alan Taylor  
(Sedway consulting)

## Grid Contracts

Drew Brabb

## Credit & Risk

Marc Chazaud  
Chris Mitchell  
Mike Barker

# Independent Evaluator

- Sedway Consulting will be the Independent Evaluator (IE) for this solicitation
  - Alan Taylor – lead and key contact ([alan.taylor@sedwayconsulting.com](mailto:alan.taylor@sedwayconsulting.com))
- Role of the IE is to ensure fair and equal treatment of all bidders by:
  - Monitoring SCE's solicitation and negotiation processes
  - Monitoring SCE's valuation methodologies and selection processes
- The IE is privy to all offers, invited to participate in all negotiations and must be copied on all correspondence between SCE and bidders

**Bidders must cc: Independent Evaluator on all emails and correspondences to SCE**

## Supplier Diversity; Potential Funding for Development Security

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### ***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](http://www.sce.com/SD)
  - Guidance is also available at [www.sce.com/EnergyProcurement](http://www.sce.com/EnergyProcurement) under the heading “Help & Guidance”
  - Contact Cristina Radu at 626-302-3412 or [cristina.radu@sce.com](mailto: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 SO<sub>2</sub> 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

## Document Conflicts

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- This presentation is intended to be a summary level discussion of the information and requirements established in the 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





# **LCR RFO Bid Materials**

**Gene Lee**

**(Contract Origination Lead)**

# LCR RFO Schedule

Timeline	Event
<b>Sept 12, 2013</b>	RFO documents issued
<b>Dec 2, 2013</b>	Deadline to submit Non-binding Notice of Intent to Offer
<b>Dec 16, 2013</b>	Deadline to submit Indicative Offer and completed Offer Submittal Package
<b>Jan 30, 2014</b>	Shortlist notification
<b>May 22, 2014</b>	Deadline to complete negotiations of Agreement(s)
<b>May 29, 2014</b>	Deadline to submit Final Offer
<b>June 26, 2014</b>	Last date for notification of successful Offers and to sign Agreements



# 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

# RFO Instructions – What, Where and When?

- SCE is seeking to procure incremental (new) capacity in the form of demand side management programs, energy storage and generation projects
- Generation 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)
  - RA becomes part of product sold to SCE
  - May require Seller to finance additional Deliverability Network Upgrades

## RFO Instructions – What, Where and When?

- All project must be located in the Moorpark or West LA Basin Sub Areas
  - As SCE is procuring for a grid need, defining via map boundaries can be problematic – e.g. projects located on the edges may actually interconnect outside of the required area
  - Instead, SCE has identified A-Bank substations that make up the required location
    - Generation projects must interconnect at those A-Bank substations or at lower voltage substations that are connected to those A-Bank substations
    - Demand side management projects must source demand response or energy efficiency from customers that take or receive electricity service from those A-Bank substations or from lower voltage substations that are connected to those A-Bank substations

## RFO Instructions – What, Where and When?

- SCE is procuring for a 2021 need, thus the delivery period must include the entire calendar year 2021
- 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
  - SCE is working on releasing a map that more specifically identifies locations of the Moorpark and West LA Basin A-Bank substations

# Offer Sheet Walk Through

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- Offer Sheet has a number of sections that need to be completed by bidders, SCE highlights a few of those sections:
  - Attachment B.12 Site Control – SCE is requiring “in front of the meter” bidders to attest to site control by indicative offer date
  - Attachment C.2 Project Description – Aside from just a description, if there are any unique or innovative solutions proposed, this is the best area to document
  - Attachment C.4 Interconnection Information – SCE is not requiring bidders to be in the interconnection process in order to submit a bid (but progress in this area helpful in demonstrating project viability)
  - Attachment I Confidentiality Agreement – Executed Confidentiality Agreement necessary to continue in the RFO process, if bidder has participated in prior SCE RFOs an executed “evergreen” NDA may satisfy requirements

# 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



# Security Posting Requirements

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- No bid security deposit requirement
- Delivery Date Security posting requirements after contract execution and until delivery, with specific details contained in Purchase Agreements (e.g. \$/kW amounts)
  - 50% after Effective Date of Contract, 50% after CPUC approval
  - Demand Response is 10% of outstanding capacity payments
- After delivery commences various levels of Performance Assurance posting requirements, with specific details contained in Purchase Agreements

# Questions







# Break

**Please be back in 15 Minutes!**



# Valuation and Selection

**Ranbir Singh**

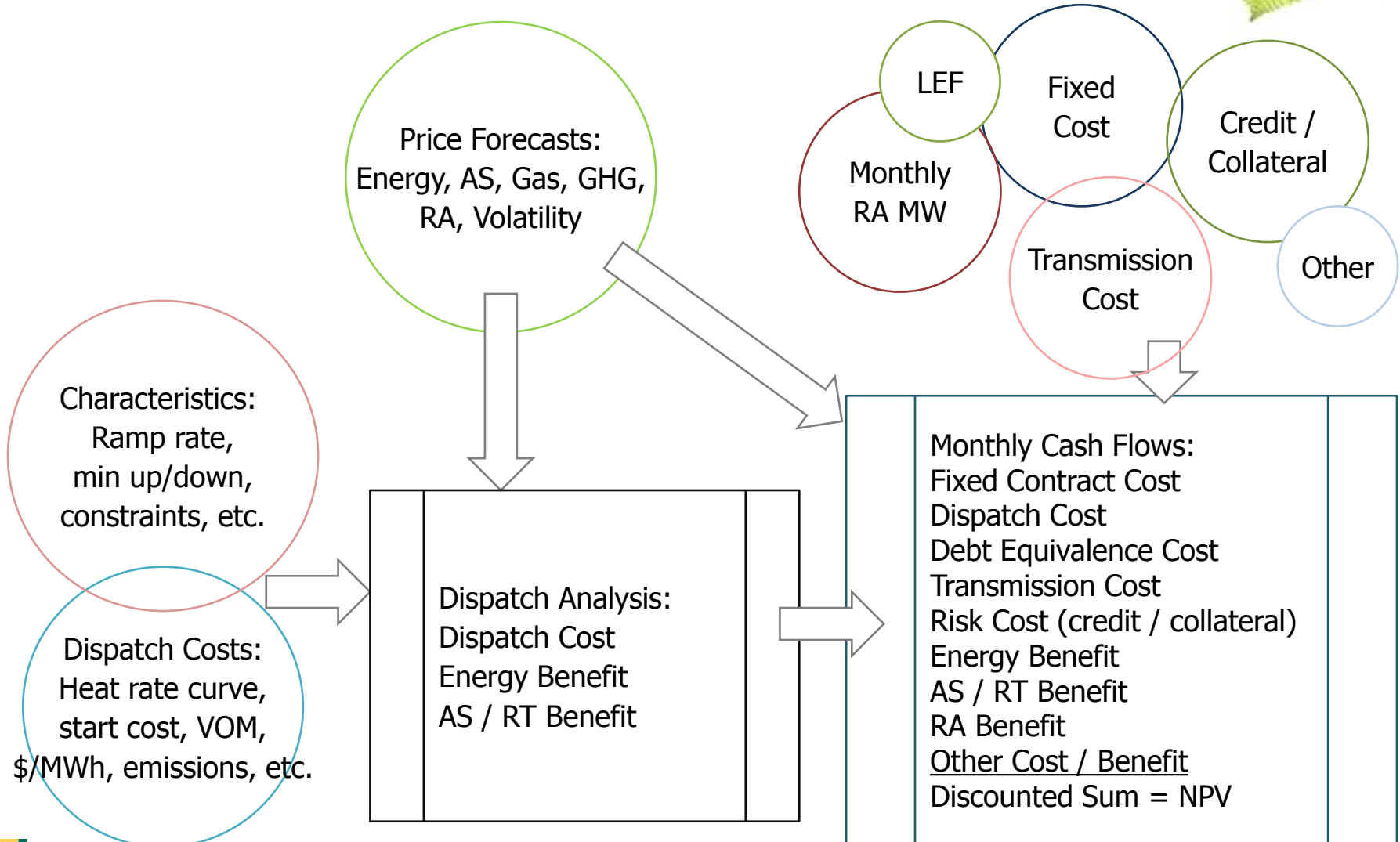
**(Portfolio Valuation Manager)**



## 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

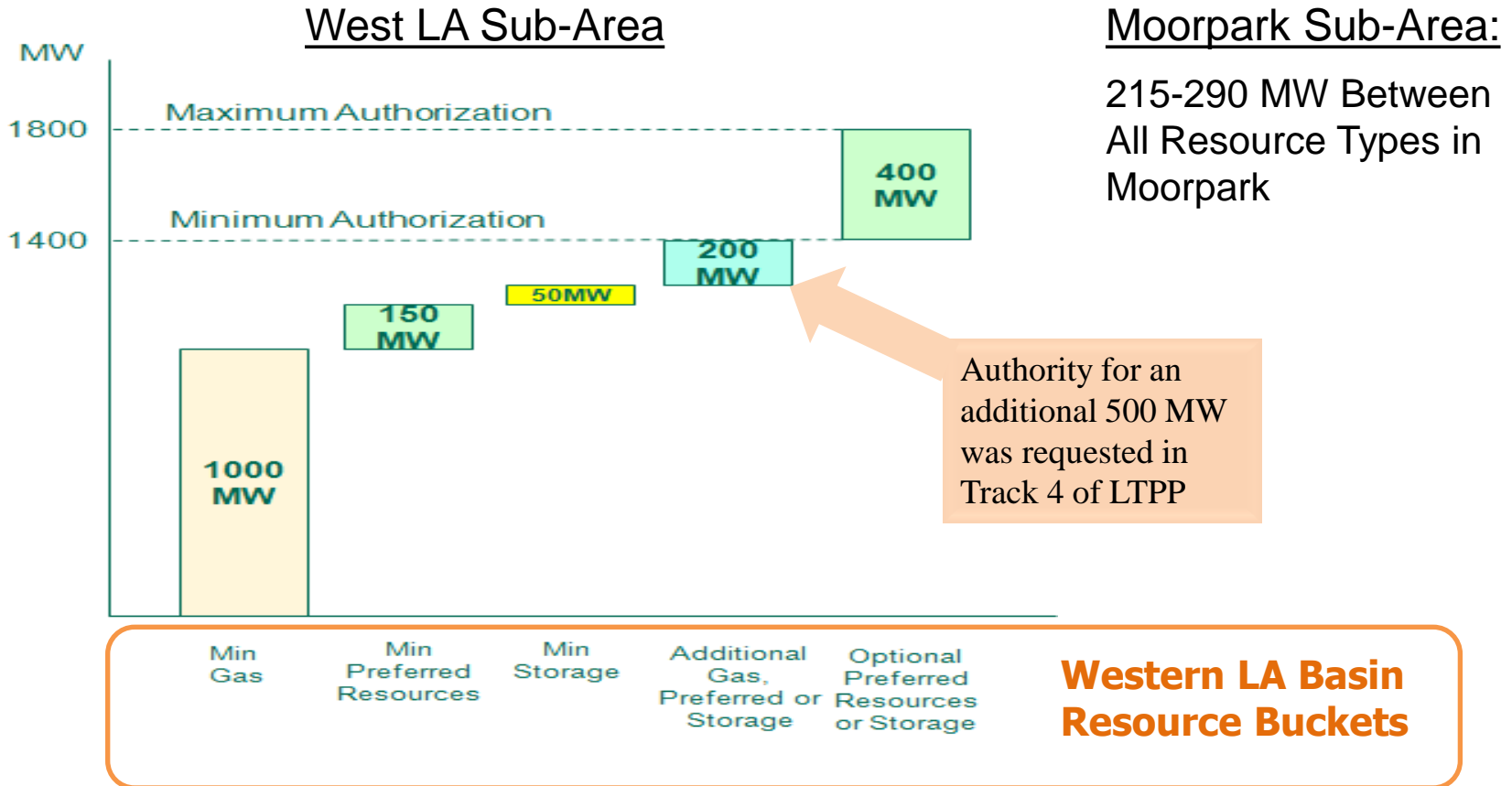
# Valuation Process



# 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			✓		✓	✓	✓		✓

# Selection – Comparison Within Resource Buckets





## Dispatch Analysis

- Dispatchable Resources
  - Production cost modeling of resource operating characteristics against market price forecasts
  - Market price volatility incorporated (i.e. potential changes in gas and power prices based on historical observations)
  - Real-time market price capturing
    - More flexible resources can capture more real-time value
  - Ancillary services if offered by the resource
- Must-take resources
  - Expected generation delivery profile valued against market price forecast
  - No real time or ancillary services value



## 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





## RA Benefit

- GFG Tolls and RA Tags
  - Contractual monthly RA MW
- Renewable Resources
  - SCE will use the existing exceedance methodology, or other existing rules for baseload facilities, for determining monthly RA MW
- DR and EE
  - Based on existing program counting rules
  - LA Basin and system RA quantities equal to 100% and 115% of peak load reduction amounts, respectively
- CHP
  - Based on peak-period firm deliveries
  - As-available will not receive RA credit
- Energy Storage and DG
  - 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



## Transmission and DE Cost

- Transmission costs will be based on a Phase 1 Interconnection Study (as defined in the CAISO Tariff) (or equivalent study), or later study for generator interconnection procedures (GIP) applications
- For projects with no interconnection study, but with an offer providing SCE the right to terminate if system transmission upgrade costs exceed a specified amount, system transmission upgrade costs are based on the specified transmission upgrade amount
- Debt equivalence is the term used by credit rating agencies to describe the fixed financial obligation resulting from long-term purchased power contracts
  - S&P methodology
  - A direct function of unavoidable contract costs



## Collateral and Other

- Negotiated credit and collateral requirements that are different from SCE's pro forma requirements may create incremental exposure to SCE
  - This incremental exposure will result in an additional evaluated cost to the offer
- Other offer benefits and costs, such as distribution upgrade deferral benefits and fixed fuel costs will be assessed for each applicable offer

# Questions

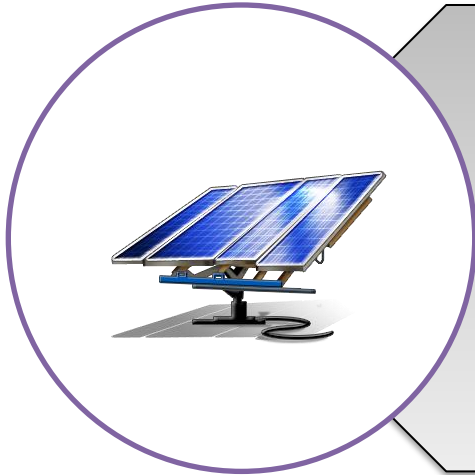




# Interconnection Service

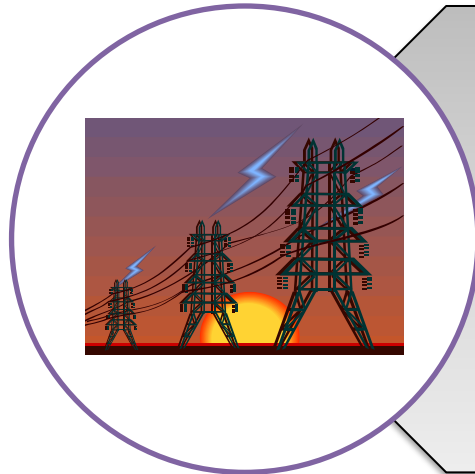
## Drew Brabb

# PPA & IA Basics



## Power Purchase Agreement (PPA)

- Commercial contract detailing the terms of SCE's purchase of seller's product including energy, capacity and associated Green Attributes.
- Range from standard to negotiated



## Interconnection Agreement (IA)

- About physical access to lines and wires to move energy
- Range from moderately simple to extremely complex
- Always executed with the transmission/distribution operator

# Interconnection Process: Dynamic For a Reason

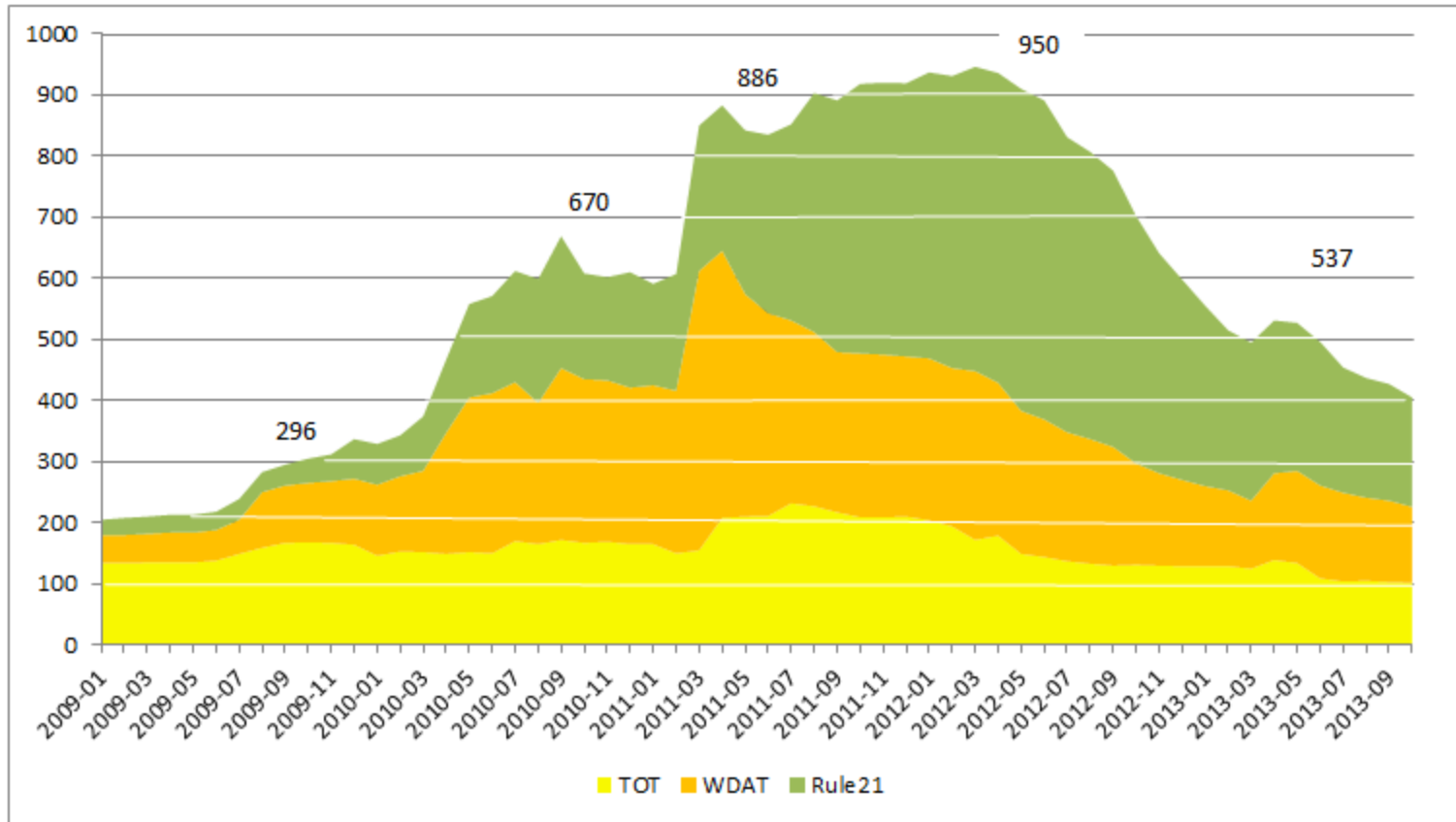
- Interconnection Process:
  - Application
  - Study
  - Contract Agreement
  - Construction and Generation
- What Inspires the creation and evolution of the Interconnection Process
  - Safety
    - Uncontrolled energy can be harmful to both equipment and people
  - Stability and Reliability
    - Generators impact grid operations and system planning
      - Congestion, power flow management, Voltage regulation
  - Equal Access for All
    - Small and Large Developers, Small and Large Facilities
    - Earlier and Later Application Dates
  - Fair Cost Allocation among Ratepayers and Developers
    - Network upgrades
    - Upgrades triggered by projects

## Pre-Agreement Studies Take Time

- Studying New Generation Interconnection is Complex
  - Grid Characteristics based on specific location.
  - Planned Upgrades
    - Load Growth
    - Congestion
    - Recent changes to WECC or NERC requirements
  - Current or Parallel Construction
    - New generation already in the Interconnection Process
  - Assume 100% viability, 100% capacity for 100% applications
- Interdependency, Volume, Uncertainties, Cost Caps



# Active Interconnection Projects 2009-Present\*



\*Does not include the following:

- 75 Projects with IA not required
- 20 Withdrawn Projects missing Withdrawal Dates
- 64 Inactive projects

# Solutions

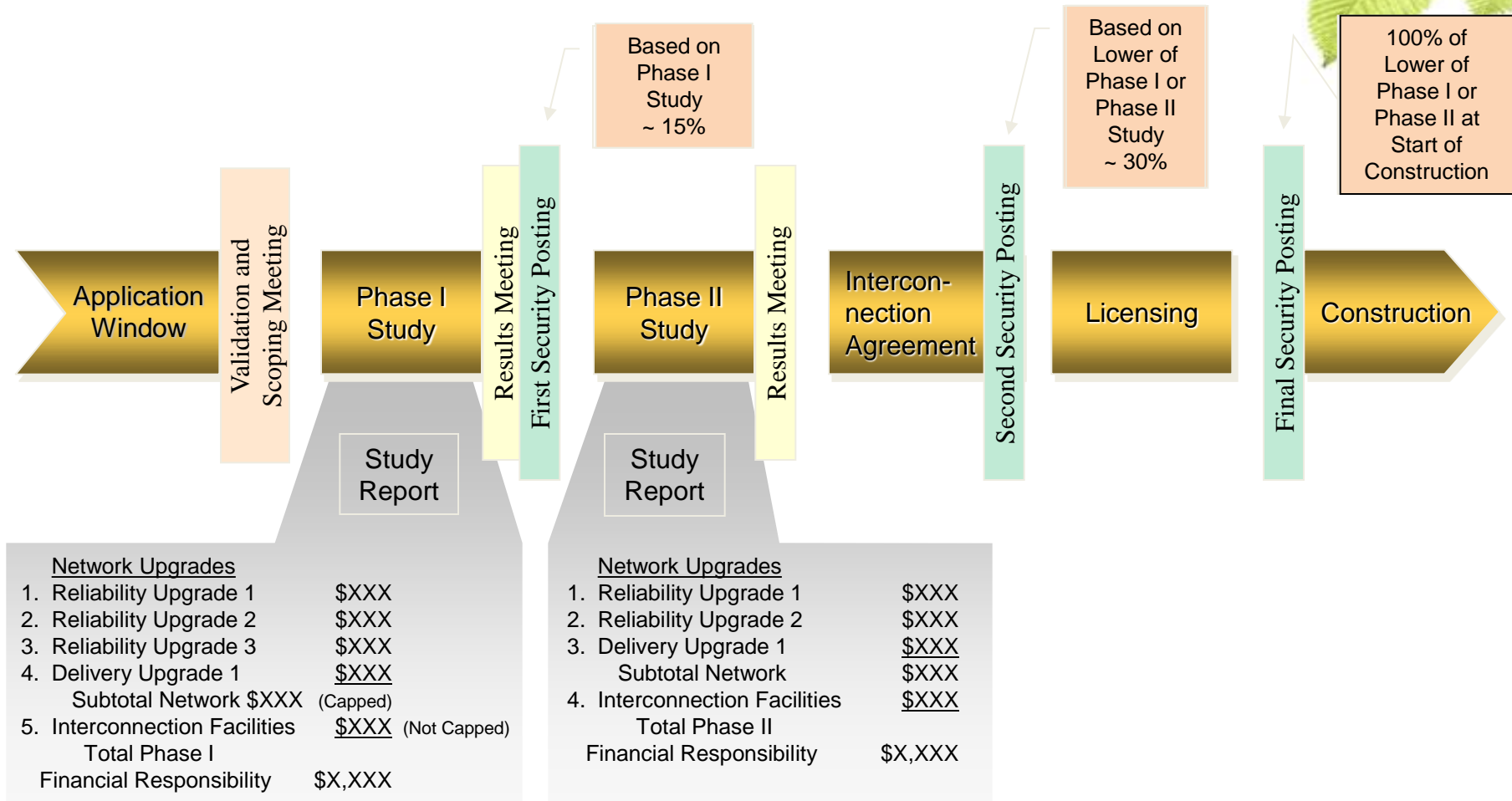
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- Tariff Reform and Clustering.
  - 2008 – 2009: CAISO reformed Large Generator (>20 MW) procedures to a clustering process; SCE followed suit.
  - 2010-2011: CAISO reformed its Small Generator procedures to be clustered along with Larges. SCE followed suit.

## Clustering Improves Interconnection Process

- Higher upfront study deposits, raise the bar to speculation
- Condense the number of studies and eliminate restudies
- Provide reasonable cost and timing certainty to generators earlier in the interconnection process
- Better integrated with the annual CAISO Transmission Planning Process (TPP)
- Generators must post financial security as they progress thru the process, and increase the posting to 100% at start of construction of upgrades
- Serial Projects, unfortunately, could not incorporate clustering retroactively.

# Reformed Interconnection Process



# SCE's Cluster Interconnection Process

- **Developer Applies:**
  - Once Annually -- March 1st – March 31st
  - \$50,000 plus \$1,000 per MW with a cap at \$250,000
  - Site Exclusivity or the option of posting \$100,000
  - Completed and Valid Application
- **STUDY REPORTS:**
  - Phase I Study Reports (4-5 months)
  - Phase 2 Study Reports (more time than Phase 1)
- **Financial security posting requirements**
  - 1<sup>st</sup> – after Phase I Study – Roughly 15% of cost estimate
  - 2<sup>nd</sup> – after Phase II Study—Roughly 15% of cost estimate
  - 3<sup>rd</sup>—upon network upgrade construction—100% of share
- **Full Deliverability Status**

# Interconnection Agreement Target Timeline

- Timeline dependent on:
  - Current backlog of projects in queue
  - Triggering of system or network upgrades
  - Customer response time
- Generally Speaking, Expect At Least 2+ Years.
  - GIP Cluster Study
    - If Application is Month 1
    - Phase 1 Report Completed roughly around Month 12
    - Phase 2 Report Completed roughly around Month 24
    - Interconnection Negotiation / Agreement around Month 27
- Above timelines are generalized.
  - Multiple details and factors affect actual timeline.

## Document Conflicts

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

# Useful Links

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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/>



# Questions



## PANEL Q&A



## **For those registered for WMDVBE and Hopi/Navajo Tribe One-on-One sessions:**

Sessions located in the corners of this room

### **For all:**

After the presentation feel free to remain for networking with other bidders and SCE LCR RFO team members will be available to answer questions

### **Additional Questions? Email:**

[LCR.RFO@SCE.com](mailto:LCR.RFO@SCE.com) *and* [Alan.Taylor@sedwayconsulting.com](mailto:Alan.Taylor@sedwayconsulting.com)