



**Marin Clean Energy  
Technical Committee Meeting  
Monday, July 14, 2014  
9:00 A.M.**

Dawn Weisz  
Executive Officer

Damon Connolly  
Chair  
City of San Rafael

Kathrin Sears  
Vice Chair  
County of Marin

Bob McCaskill  
City of Belvedere

Sloan C. Bailey  
Town of Corte Madera

Larry Bragman  
Town of Fairfax

Kevin Haroff  
City of Larkspur

Garry Lion  
City of Mill Valley

Denise Athas  
City of Novato

Tom Butt  
City of Richmond

Carla Small  
Town of Ross

Ford Greene  
Town of San Anselmo

Ray Withy  
City of Sausalito

Emmett O'Donnell  
Town of Tiburon

1 (888) 632-3674  
[mceCleanEnergy.org](http://mceCleanEnergy.org)

781 Lincoln Ave., #320  
San Rafael, CA 94901

**San Rafael Corporate Center, Boro Room  
750 Lindero Street, San Rafael, CA 94901**

**Agenda**

- 1. Board Announcements (Discussion)**
- 2. Public Open Time (Discussion)**
- 3. Report from Executive Officer (Discussion)**
- 4. Approval of 6.9.14 Meeting Minutes (Discussion/Action)**
- 5. Presentation from SunFolding on Solar Tracking System Technology (Discussion)**
- 6. Update from EDF on 23MW Solar Development Project (Discussion)**
- 7. Resource Adequacy and Flexible Capacity Requirements (Discussion)**
- 8. Members & Staff Matters (Discussion)**
- 9. Adjourn**



Agenda material can be inspected in the Marin County Sheriff's lobby, located at 3501 Civic Center Drive, San Rafael, CA 94903. The meeting facilities are in accessible locations. If you are a person with a disability and require this document in an alternate format (example: Braille, Large Print, Audiotape, CD-ROM), you may request it by using the contact information below. If you require accommodation (example: ASL Interpreter, reader, note taker) to participate in any MCE program, service or activity, you may request an accommodation by calling (415) 464-6032 (voice) or 711 for the California Relay Service or by e-mail at [djackson@mceCleanEnergy.org](mailto:djackson@mceCleanEnergy.org) not less than **four work days** in advance of the event.

**MARIN CLEAN ENERGY  
TECHNICAL COMMITTEE MEETING  
MONDAY June 9, 2014  
9:00 A.M.  
SAN RAFAEL CORPORATE CENTER, BORO ROOM  
750 LINDARO STREET, SAN RAFAEL, CA 94901**

**Roll Call**

**Present:** Kate Sears, County of Marin, Chair  
Ray Withy, City of Sausalito  
Ford Greene, Town of San Anselmo  
Kevin Haroff, Town of Larkspur

**Absent:** Emmett O'Donnell, Town of Tiburon  
Carla Small, Town of Ross

**Staff:** Dawn Weisz, Executive Officer  
Beckie Menten, Energy Efficiency Director  
Emily Goodwin, Director of Internal Operations  
Kirby Dusel, Technical Consultant

**Action taken:**

**Agenda Item #4 – Approval of Minutes from 5.12.14 Meeting (Discussion/Action)**

**M/s Haroff/Greene (passed 4-0) approval of minutes from 5.12.14 meeting. Directors O'Donnell and Small were absent.**

\_\_\_\_\_  
Kate Sears, Chair

**ATTEST:**

\_\_\_\_\_  
Dawn Weisz, Executive Officer





Otherlab

Otherlab is a private research and development lab focusing on renewable energy and robotics. Operating under several DOE/DOD awards.



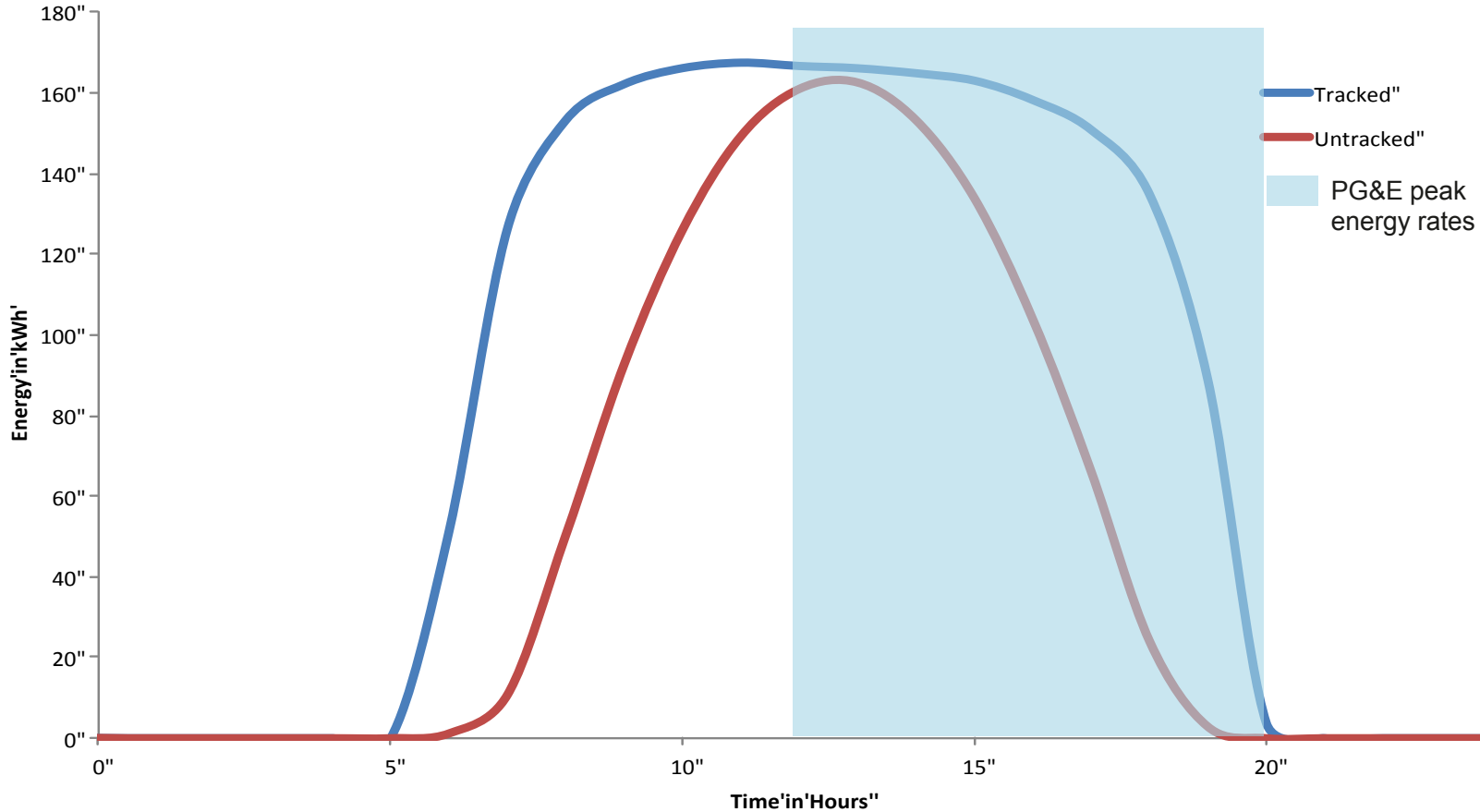
sunfolding

Sunfolding is an Otherlab company focused on 2-axis solar tracking that utilizes air-driven mass-manufactured actuation.

Leila Madrone – CEO	Masters, MIT. Over 10 years of industry experience. Led the commercialization of NASA’s Gigapan technology.
Gwen Rose – Project Market Strategy and Operations	Former director of strategy and operations at Vote Solar working on campaigns designed to bring solar to scale. Prior to Vote Solar, Gwen worked on Marin County’s solar and climate protection programs,
Dr. Saul Griffith – CEO, Otherlab	PhD, MIT. Experienced entrepreneur and inventor in the energy space. Founded Makani Power, Wattzon, Squid Labs, Otherlab, Instructables, Optiopia.

Tracked systems produce more electricity at valuable peak hours of the day, when non-tracked systems would typically drop off in production

**Tracked vs. Untracked Energy Output  
Sacramento July 24th**



# Solar tracking hasn't been widely adopted. Why?

**HEAVY**

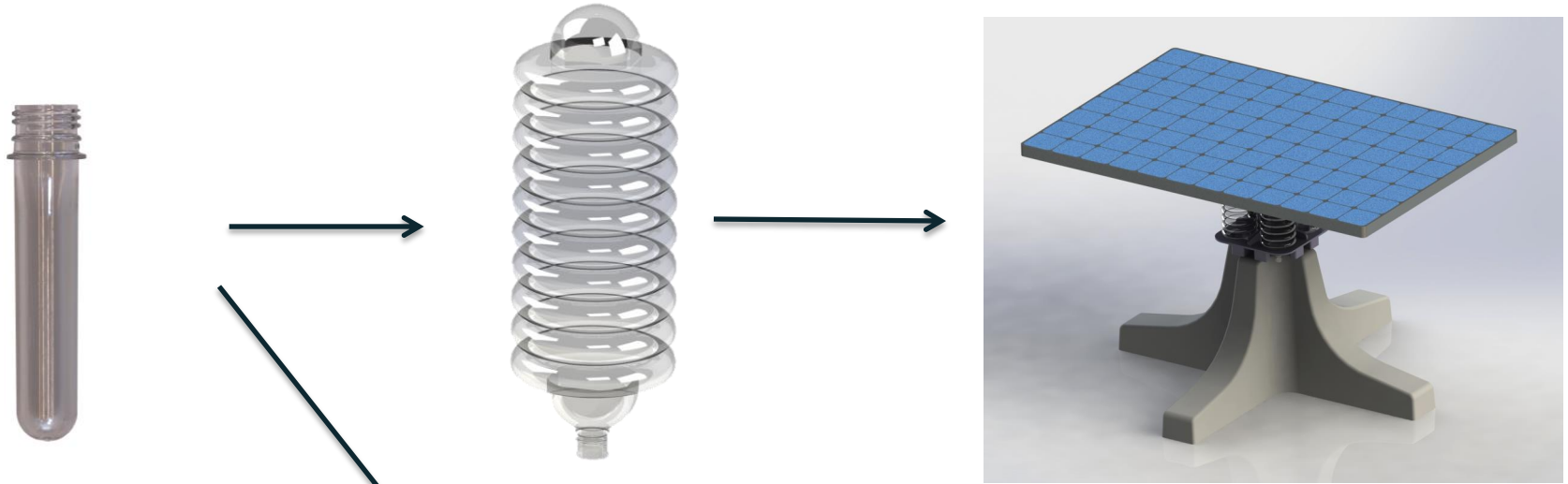
**COMPLEX**

**LABOR  
INTENSIVE**



In other words...expensive

# Sunfolding's system is manufactured with high-performance plastics for scalable, reliable systems



Same process and cost as standard water bottles

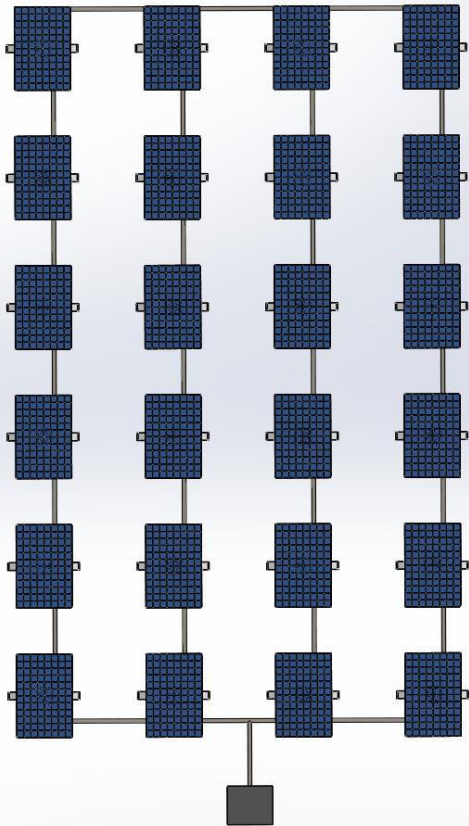


High strength plastics (10x higher than steel by weight)  
Materials suited for 30 year lifetimes in harsh environments

# System engineering is simple and robust – scalable layout and non-penetrating mount make for low-cost installation and O&M

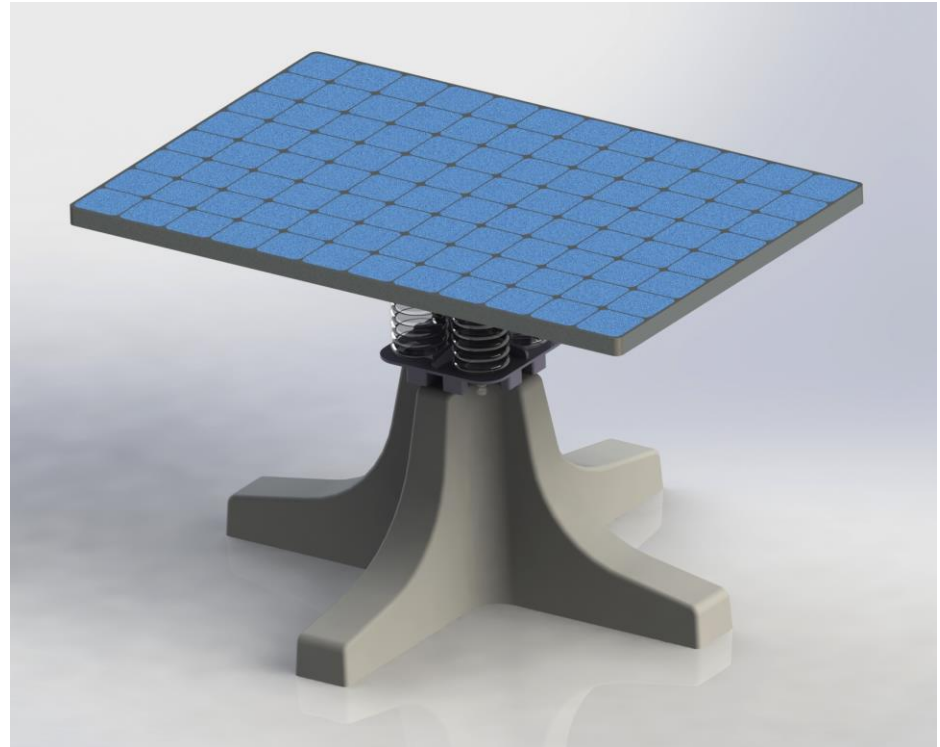
## Scalable layout:

- One controller for up to 100 trackers
- Scales well for large fields



## Non-penetrating mount:

- Low-profile, pre-fabbed, low weight
- Ballasted mounting for any surface
- Site disruption is minimized





## Quarterly Progress Report

By:

Cottonwood Solar, LLC  
c/o EDF Renewable Development, Inc.  
4000 Executive Blvd., Suite 100  
San Ramon, CA 94583  
Project Site Locations: Marin, Kern and Kings Counties  
Project Technology: Solar Photovoltaic  
Capacity (MW): 24 MWac

On:

June 30<sup>th</sup>, 2014

For quarter of:

Quarter 2 2014

Provided to:

Marin Clean Energy (“Buyer”)

**1. EXECUTIVE SUMMARY**

Please include a brief summary of activities completed in the following key areas. In each area please address specific activities performed or completed from contract inception to report date as well as major activities planned for next quarter:

**Project Summary & Background**

EDF Renewable Energy’s Cottonwood Solar project with Marin Clean Energy (MCE) provides for point of interconnection delivery of 1 MW of solar photovoltaic project (or projects) developed within Marin County and 23 MW of solar photovoltaic projects developed located in Kings and Kern counties.

Marin Clean Energy and EDF Renewable Energy executed a PPA amendment on 12/11/2013 to reduce the project capacity from 31MW to 24 MW. The GCOD is March 29<sup>th</sup>, 2015. Pursuant to the PPA Amendment, Gooselake was selected to remain at 12 MWac and the City of Corcoran site will be reduced to 11MWac. The Elk Hills project was removed from the Cottonwood Solar, LLC project entirely.

Permitting and interconnection agreements for the two ground-mount sites are complete. For the 1MW carport site in Marin, lease terms have been agreed upon by both parties for the leading site. The executed lease will be required prior to submittal of the interconnection application. The interconnection application has been prepared and ready once the lease is executed. Lease execution is expected soon as EDF-RE continues to work with the Lessor and its Lenders.

1.1. Permitting and Governmental Approvals

Site	County	Output (MW ac)	Permit Status
City of Corcoran	Kings	11	Complete
Gooselake	Kern	12	Complete
Local Carport	Marin	1	Pending

EDF-RD has continued to minimize potential impacts to sensitive species on or near the project sites. Specifically, EDF-RD has contracted an Environment Monitoring Firm to perform site monitoring. The City of Corcoran site, which was identified as a potential habitat for Burrowing Owls was monitored for any active Burrowing Owls. After ensuring no Burrowing Owls were on site, Burrow Blocker technology was used to safely fill future potential habitats ensuring no Burrowing Owls will be on site during construction. It is now anticipated that Construction will occur outside of the breeding season posing less of a risk to Burrowing Owls.

CAISO has assigned the below Internal ISO Numbers (i.e. project tracking number):

- o Corcoran City: 14GEN767
- o Goose Lake: 14GEN831

EDF-RD is awaiting assignment of the CAISO Resource IDs. EDF-RD continues to manage the CAISO New Resource Implementation process and have submitted the necessary deliverables under Bucket 1 while continuing to work on Bucket 2.

## 1.2. Design and Engineering

**Carport:** Initial site designs have been performed and will be included in the RFP process. The current carport design for proposed lease site is optimized to maximize the annual energy production and DC capacity in a non-standard “curved” configuration of the parking lot. The design with 5° tilt and varying carport azimuths allows us to minimize losses and maximize capacity. Using high efficiency modules and DC optimizers are also being considered. The final design is subject to change by the EPC.

The RFP for procurement of the Carport EPC firm has been delayed due to the outstanding lease negotiations with the project site in Marin County. The RFP will be launched to a shortlist of bidders as soon as the land rights are properly secured.

EDF plans to include the below language promoting local hiring in the RFP:

*“EDF Renewable Energy values and supports the local and diverse hiring practices. This can be part of community development and job partnerships, hiring/subcontracting local and diverse (MWDV) owned businesses, and use of prevailing wages and/or labor agreements. Please provide a brief statement of your local and diverse hiring practices, use or proposed use of prevailing wages and/or labor agreements, relevant experiences, and/or proposed local and diverse hiring for this proposal, if applicable. While this is not a mandatory requirement, such a statement will be considered in the selection process.”*

**Goose Lake & City of Corcoran:** First Solar Electric (California), Inc. (First Solar) has been providing services under the Turnkey EPC that was executed on March 18, 2014. In Q2 2014, the EPC Contractor has performed the following activities:

- Completed 30% Design (Civil & Balance of System).
- Commence building permitting process by submitting Issue for Permit Designs to the respective agencies.

In Q3 2014, the EPC Contractor is expected to complete:

- Finalize Issue For Permit Design Package
- Obtain Grading Permits
- Site Mobilization for City of Corcoran

## 1.3. Interconnection

Site	County	Output (MW ac)	SGIA Status
City of Corcoran	Kings	11	Executed
Gooselake	Kern	12	Executed
Local Carport	Marin	1	Application pending

executed lease/  
required land control.

- EDF-RE entered an EPC Agreement with Contra Costa Electric, Inc. (“CCE”) for the construction of the City of Corcoran gen-tie line on April 23, 2014. CCE is a signatory to the local International Brotherhood Of Electrical Workers union which will provide local labor to assist in building the gen-tie line.
- In Q2 2014, CCE performed the following activities:
  - Mobilized the week of 5/12 and set up the laydown yard on the corner of Nevada Avenue & 5<sup>th</sup> for start of construction for the gen-tie.
  - The Kings County Encroachment permit for the Gen-Tie was successfully pulled on 5/20.
  - Work on setting the vaults and conduit for the gen-tie commenced.
- In Q3 2014, CCE is expected to perform the following:
  - Finalize all underground and overhead work for the gen-tie.
  - Gen-tie mechanical and Substantial Completion.

#### 1.4. Financing

EDF-RE is currently in discussions with potential cash equity acquirers, pursuant to which EDF proposes to sell 50% or more of the equity interests in Cottonwood.

#### 1.5. Major Equipment Procurement

First Solar has begun procuring Long Lead items.

#### 1.6. Construction

FSLR will be mobilizing for City of Corcoran in Q3 2014. First Solar has entered a Work Site Agreement with IBEW Local Union 100 and Ironworkers Local 155 for construction of Goose Lake and City of Corcoran.

#### 1.7. Startup Testing and Commissioning

No pending activity

## 2. PROJECT SCHEDULE

See attached Project Schedule for more detail.

Milestone	Scheduled Date of Completion	Revised Scheduled Date of Completion (If Necessary)	Actual Completion Date	Status/Progress
<b><u>Permitting</u></b>				
• Goose Lake				Permit received
• City of Corcoran	Completed		6/29/2010	Permit received
• Marin Carport	See note			Awaiting executed lease/land control
<b><u>Design and Engineering</u></b>				
• Initial site layouts	Completed		Completed	
• Engineering/Construction site visits	Dec. 2012		Dec. 2012	
• Preliminary Engineering design	Feb. 2013	June, 2013	June, 2013	
• 30% Design Submission			June, 2014	
• Issue For Permit Design Package	July, 2014			
<b><u>Interconnection</u></b>				
• Final facility studies – 23 MW	August 2012	Sept. 30, 2012	October 2, 2012	Executed.
• Interconnection application – 1 MW	August 2012	July 2014		Awaiting executed lease/ required land control
• Final facility study – 1 MW	January 2013	July 2014		Updated to reflect new start of studies
• Marin Clean Energy makes PIRP status decision	See note			Marin Clean Energy determination
• CEC pre-certifications	See note			Received.

<b>Milestone</b>	<b>Scheduled Date of Completion</b>	<b>Revised Scheduled Date of Completion (If Necessary)</b>	<b>Actual Completion Date</b>	<b>Status/Progress</b>
<b><u>Financing</u></b>				
• Identify financing requirements			June 2014	Discussions with potential equity buyers initiated.
• Execute MOU	July 2014		July 2014	Likely party identified. MOU to be executed.
• Conclude negotiations	See note			Transaction timing TBD.
<b><u>Equipment Procurement</u></b>				
• Develop and circulate bid packages	May 2013		May 5 <sup>th</sup> , 2013	Turnkey EPC RFP bid packages circulated to short-listed bidders.
• Contractor selection	June 2013		March 3 <sup>rd</sup> , 2014	TSA executed on 3/3/2014 while EPC contract was finalized.
• Equipment selection	June 2013		March 3 <sup>rd</sup> , 2014	EPC contract is turnkey solution.
<b><u>Construction</u></b>				
• Site mobilization, worker training	Sept. 2013	Sept. 2014		
• Construction	Sept – Feb.	Sept – Feb.		
• Site de-mobilization	April 2014	February 2015		
<b><u>Startup/Testing/Commissioning</u></b>				
• Communications testing	Feb. 2014	Dec. 2014		
• Preliminary operations	Feb. 2014	Feb. 2015		
• Commissioning	March 2014	March 2015		

Milestone	Scheduled Date of Completion	Revised Scheduled Date of Completion (If Necessary)	Actual Completion Date	Status/Progress
<b><u>Key Contract Dates</u></b>				
• Determination to proceed	Nov. 2012		Nov. 2012	
• Provides development security	Nov. 2012		Nov 5. 2012	
• Designate facilities to construct	May 15, 2013		May 15, 2013	
• Completion of CAISO studies	July 1, 2013		October 2, 2012	
• Start of construction	Sept. 1, 2013	Sept. 1, 2014		
• Commercial Operation Date	March 31, 2014	March 29 <sup>th</sup> , 2015		

### 3. PERMITTING AND GOVERNMENTAL APPROVALS

#### 3.1. Environmental Review – Kern County Project, Goose Lake (completed)

<b>Lead Agency</b> Kern County California	
<b>Date of application/submission</b>	__/__/____ (expected / actual)
<b>Date application/submission deemed complete by agency</b>	<u>_8/_31/_2011__</u> (expected / <b>actual</b> )
<b>Date of initial study</b>	__/__/____ (expected / actual)
<b>Process</b> (e.g., Notice of Exemption, Negative Declaration, Mitigated Negative Declaration, Environmental Impact Report)	Conditional Use Permit with EIR
<b>Date of Notice of Preparation</b>	<u>_8/_31/_2011__</u> (expected / <b>actual</b> )
<b>Date of Draft Negative Declaration – Mitigated Negative Declaration - Environmental Impact Report</b>	<u>_8/_31/_2011__</u> (expected / <b>actual</b> )
<b>Date Notice of Determination filed at CA Office of Planning and Research or County Clerk</b>	<u>_12/_8/_2011__</u> (expected / <b>actual</b> )

#### Environmental Review Kings County Project, City of Corcoran (completed)

<b>Lead Agency</b> City of Corcoran, California	
<b>Date of application/submission</b>	<u>_9/_7/_2012_</u> (expected / <b>actual</b> )
<b>Date application/submission deemed complete by agency</b>	<u>_10/_9/_2012_</u> (expected / <b>actual</b> )
<b>Date of initial study</b>	__/__/____ (expected / actual)
<b>Process</b> (e.g., Notice of Exemption, Negative Declaration, Mitigated Negative Declaration, Environmental Impact Report)	Notice of Exemption
<b>Date of Notice of Preparation</b>	__/__/____ (expected / actual)
<b>Date of Draft Negative Declaration – Mitigated Negative Declaration - Environmental Impact Report</b>	__/__/____ (expected / actual)
<b>Date Notice of Determination filed at CA Office of Planning and Research or County Clerk</b>	<u>_6/_29/_2010__</u> (expected / <b>actual</b> )
	Revision Date: 10/19/2012 ( <b>actual</b> )

#### Environmental Review – Marin County Carport Project (pending negotiation outcome)

<b>Lead Agency</b> tbd,(in Marin, County California)	
<b>Date of application/submission</b>	<u>2/_14/_2014__</u> ( <b>expected</b> / actual)
<b>Date application/submission deemed complete by agency</b>	__/__/____ (expected / actual)
<b>Date of initial study</b>	__/__/____ (expected / actual)
<b>Process</b> (e.g., Notice of Exemption, Negative Declaration, Mitigated Negative Declaration, Environmental Impact Report)	building, grading, electrical and other permits as needed
<b>Date of Notice of Preparation</b>	__/__/____ (expected / actual)
<b>Date of Draft Negative Declaration – Mitigated Negative Declaration - Environmental Impact Report</b>	__/__/____ (expected / actual)
<b>Date Notice of Determination filed at CA Office of Planning and Research or County Clerk</b>	__/__/____ (expected / actual)



1.1. Federal, State, Regional, County or Local Governmental Approvals/Permits\*

\*County and local permits encompass state and Federal requirements, including mitigation provisions.

<b>Required Approval/Permit (list all that are applicable)</b>	<b>Agency</b>	<b>Status Summary</b>
<b>Encroachment Permits</b>	CalTrans, Kings County, City of Corcoran, Kern County	Issued 5/20/2014.
<b>SWPPP</b>	State Water Resource Control Board	Issued Q2 2014..
<b>Building Permits</b>	City of Corcoran, Kern County	Pending final design
<b>Grading Permits</b>	City of Corcoran, Kern County	Pending final design

## 2. INTERCONNECTION AND TRANSMISSION

### 2.1. CAISO Queue Position for Ground Mount Projects

PG&E SGIP process, not CAISO; only involves CAISO as part of the One Time Deliverability Assessment Study Report. Phase 1 and Phase 2 reports have been received, please see attached. Studies completed to date.

All System Impact and Facility Studies are complete. All ground mount projects have signed interconnection agreements. Completion dates below.

- City of Corcoran System Impact Study : 8/2010
- City of Corcoran Facility Report: 7/3/2012
- Goose Lake System Impact Study: 10/2010
- Goose Lake Facility Report: 5/25/2012
- Elk Hills System Impact Study: 9/2011
- Elk Hills Facility Study Report: 7/11/2012
- Corcoran Irrigation District System Impact Study: 9/2010
- Corcoran Irrigation District Facility Study Report: 7/11/2012

### 2.2. Other interconnection activities recently performed

PG&E continues on the design and engineering phase in consultation with EDF-RE for the PG&E design/build for the Goose Lake Project. PG&E physical work has commenced at the Goose Lake substation. CCE constructing City of Corcoran Gen-Tie Line.

Interconnection activities expected during the current month

Continue to work with PG&E transmission on the design and engineering phase.

Submittal of Marin County project's interconnection application once the executed lease is received.

## 3. DESIGN and ENGINEERING

<b>Responsible Organization (e.g. Seller, EPC Contractor, Subcontractor)</b>	<b>Primary Responsibility/ Activity</b>	<b>Expected Date of Completion</b>	<b>Revised Expected Date of Completion</b>	<b>Actual Date of Completion</b>
First Solar	Submit 30% Design (Civil Only)	4/20/2014		Q2 2014
First Solar	Submit 30% Design (BOS)	5/19/2014		Q2 2014
First Solar	Issue for Permit Design Package	6/23/2014	July 2014	

**4. FINANCING**

EDF-RE is currently in discussions with potential cash equity acquirers, pursuant to which EDF proposes to sell 50% or more of the equity interests in Cottonwood. MOU likely to be executed in July 2014.

4.1. List all key activities described in the project financing plan – completed, in-process and planned (future).

No activity to report.

<b>Responsible Organization (e.g. Seller, Lender, etc.)</b>	<b>Primary Responsibility/Activity</b>	<b>Expected Date of Completion</b>	<b>Revised Expected Date of Completion</b>	<b>Actual Date of Completion</b>

**5. MAJOR EQUIPMENT PROCUREMENT**

Equipment	Manufacturer	Date of Order	# Ordered	# On-Site	# Installed	# Tested
Modules	First Solar	TBD	TBD	TBD	TBD	TBD
Inverters	SMA	TBD	TBD	TBD	TBD	TBD

First Solar directly responsible for all major equipment procurement for Goose Lake and City of Corcoran

**6. CONSTRUCTION & STARTUP/COMMISSIONING**

No activity to report

List all activities – completed, in-process and planned (future).

<b>Responsible Organization (e.g. Seller, EPC Contractor, Subcontractor)</b>	<b>Primary Responsibility/Activity</b>	<b>Expected Date of Completion</b>	<b>Revised Expected Date of Completion</b>	<b>Actual Date of Completion</b>

6.1. Attach EPC Contractor Monthly Progress Report.

EPC Monthly Progress Report from May Attached.

**7. MILESTONE REMEDIAL ACTION PLAN (IF APPLICABLE)**

No milestones missed.

7.1. Missed Milestone

7.2. Plans to achieve missed Milestone

## 8. CERTIFICATION

I, Kyle Lauter, on behalf of and as an authorized representative of EDF Renewable Energy, do hereby certify that any and all information contained in this Quarterly Progress Report is true and accurate, and reflects, to the best of my knowledge, the current status of the project as of the date specified below.

By: 

Name: Kyle Lauter

Title: Program Manager

Date: June 30, 2014

**EXHIBIT H**

**FORM OF MONTHLY PROGRESS REPORT**

**by and between**

**Cottonwood Solar, LLC**

**and**

**First Solar Electric (California), Inc.**

**dated as of March 18, 2014**

**Cottonwood Photovoltaic Solar Project  
Corcoran, California**

MONTHLY PROGRESS REPORT

Reference is made to that certain Turnkey Engineering, Procurement and Construction Agreement which was entered into on the 18th day of March, 2014 between Cottonwood Solar, LLC, ("**Owner**") and First Solar Electric (California), Inc. ("**Contractor**") (the "**Agreement**"). Capitalized terms used but not defined herein shall have the meaning set forth in the Agreement.

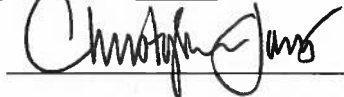
Contractor, pursuant to Section 3.4.3 of the Agreement, does certify and hereby submit to Owner a progress report describing the current progress of the Work and materials.

Contractor further certifies the information contained in the Monthly Progress Report is true and correct as of the date executed by Contractor below.

Executed by Contractor this [31] day of [\_\_May\_\_], 201[4].

CONTRACTOR:


[\_\_First Solar\_\_]

By:  \_\_\_\_\_

Name: \_\_\_\_\_ Christopher Jones \_\_\_\_\_

Title: \_\_\_\_\_ Project Manager \_\_\_\_\_

**[REPORT ATTACHED]**

<b>MONTHLY PROGRESS REPORT</b>		
<b>COTTONWOOD SOLAR</b>		<b>Project Status</b>
<b>SOLAR PROJECT SITE</b>		
<b>Report Date:</b> 05/31/2014	<b>Report Period:</b> May 1st, 2014 to May 31st, 2014	
<b>Prepared By:</b> Chris Jones		
<b>Participants / Distribution:</b> Kyle Lauter; Dave Carroll, David Hall (EDF) Cc: Jeff Pruneau; Dave Postma (First Solar)		
<b>Major Activities Performed during the Current Report Period</b>		
<u>Solar Project Site</u>		
<ol style="list-style-type: none"> <li>1. <u>Design &amp; Engineering:</u> <ol style="list-style-type: none"> <li>a) Civil designs (100%) for City of Corcoran submitted to AHJ.                             <ol style="list-style-type: none"> <li>a. Comments received from EDF and City of Corcoran. FS reviewing and implementing into final civil packages</li> </ol> </li> <li>b) Civil designs (100%) for Goose Lake submitted to Kern County.                             <ol style="list-style-type: none"> <li>a. Comments received from EDF and City of Corcoran. FS reviewing and implementing into final civil packages</li> </ol> </li> <li>c) 30% BOS package submitted for City of Corcoran</li> </ol> </li> <li>2. <u>Major Equipment Procurement &amp; Delivery:</u> <ol style="list-style-type: none"> <li>a) Procurement will proceed per engineering design. Some long-lead items that were already qualified through CID engineering have been ordered (i.e. transformers, inverters)</li> </ol> </li> <li>3. <u>Permitting:</u> <ol style="list-style-type: none"> <li>a) Initial feedback from City of Corcoran has been favorable. No hold-ups in permitting process anticipated at this time.</li> <li>b) Permitting process for GL to begin next week contingent on completion of civil plans. Kern County is proving difficult based on initial discussions.                             <ol style="list-style-type: none"> <li>a. Grading comments received and are being reviewed currently</li> </ol> </li> </ol> </li> <li>4. <u>Construction:</u> <ol style="list-style-type: none"> <li>a) FSLR has reached a Cottonwood labor agreement with IBEW and Ironworkers that governs both the CoC and GL sites.</li> </ol> </li> <li>5. <u>Testing &amp; Commissioning:</u> <ol style="list-style-type: none"> <li>a) No significant items to report at this time.</li> </ol> </li> <li>6. <u>Interconnection:</u> <ol style="list-style-type: none"> <li>a) No significant items to report at this time.</li> </ol> </li> <li>7. <u>Other</u> <ol style="list-style-type: none"> <li>a) No significant items to report at this time.</li> </ol> </li> </ol>		
<b>Major Activities Performed during the Previous Report Period</b>		
Please provide a brief summary of the major activities which were scheduled to be performed in the		



previous Report Period and their status, including those activities that were not completed as scheduled as well as the reasons why and the effects to the Project Schedule, quality and cost:

Solar Project Site

1. Design & Engineering:
  - a) Civil designs (100%) for City of Corcoran submitted to AHJ 4/17/14.
    - a. Site layout modified to account for (2) flush lines discovered within the array. EDF direction to move forward with propose Rev. 2 design
  - b) Civil designs for Goose Lake almost complete (~95%). Target submittal to Kings County 5/7/14.
  - c) Structural / Electrical engineering in process for both sites.
2. Major Equipment Procurement & Delivery:
  - a) No significant items to report at this time. Procurement will proceed per engineering design.
3. Permitting:
  - a) Initial feedback from City of Corcoran has been favorable. No hold-ups in permitting process anticipated at this time.
  - b) Permitting process for GL to begin next week contingent on completion of civil plans. Kern County is proving difficult based on initial discussions.
4. Construction:
  - a) FSLR has begun negotiations with Unions to establish Project Labor Agreements. Will confirm direction with EDF as soon as established.
    - i. Goose Lake subject to union agreement with IBEW
    - ii. City of Corcoran has no union requirements, but may follow a similar arrangement to CID due to proximity.
5. Testing & Commissioning:
  - a) No significant items to report at this time.
6. Interconnection:
  - a) No significant items to report at this time.
7. Other:
  - a) No significant items to report at this time.

**Major Activities to be Performed during the Next Report Period**

Please provide a brief summary of the major activities to be performed for each of the following aspects of the Project:

Solar Project Site

1. Design & Engineering:
  - a) Submit 30% design package (BOS) – GL
  - b) Schedule 30% design review with EDF to review. Tentatively scheduling week of 6/16 for this activity.
2. Major Equipment Procurement & Delivery:
  - a) Continue procurement activities for necessary equipment; structural and electrical.
3. Permitting:
  - a) Work through necessary issues with AHJ to complete civil and structural permitting requirements.

4. Construction:
  - a) No significant items to report at this time.
5. Testing & Commissioning:
  - a) No significant items to report at this time.
6. Interconnection:
  - a) No significant items to report at this time
7. Other:
  - a) No significant items to report at this time

**Environmental Compliance:**

Please provide a synopsis of the Contractor's environmental compliance for the current Report Period, including a description of any deviations and reporting from any applicable Environmental Laws.

- **First Solar and EDF will need to coordinate closely on MM's, CUP compliance, etc. to facilitate permitting process with Kern County (GL). FS to arrange a meeting with EDF to address week of 6/2.**

**Schedule Update:**

An updated copy of the schedule shall be attached to the Monthly Progress Report with a written analysis of schedule status, including actual versus planned progress, reporting on Important Items and Events, and identifying completion of critical path items and milestones. The schedule shall indicate early, late and actual curves.

**Solar Project Site - Important Items and Events:**

1. **Design: Delayed.** Site layout had late changes due to discovery of water lines in CoC array. FS will do everything in their power to maintain schedule, but some initial Engineering milestones may be delayed.
2. **Permitting: On schedule.** IFP packages complete for Civil on CoC. In process for GL.
3. **Equipment Ordered: On schedule.**
4. **Site Work Prep: On schedule**
5. **Equipment Delivered: On schedule**
6. **Modules Delivered: On schedule**
7. **Inverter Platforms Delivered: On schedule**
8. **Racking Installed: On schedule**
9. **Modules Installed: On schedule**
10. **In-Service: On schedule**
11. **Mechanical Completion: On schedule**
12. **Project Substantial Completion: On schedule**
13. **Site Restoration: On schedule**
14. **Final Completion: On schedule**
15. **Recovery Plans (if any)**

**Issues which may affect schedule, quality and cost:**

Identification and evaluation of problem areas that are anticipated to have a material effect on the Project Schedule, quality and cost.

**City of Corcoran:**

1. Updated survey information found (2) flush lines within array footprint. Propose revising layout to move (15) tables to accommodate. This would put parcel 4 edge of glass within (10) feet from waterline. EDF to confirm with City to determine having waterline within the fence-line is acceptable. EDF direction is move forward with Rev. 2 design. Late modification may have cost impact and delays engineering deliverables due to re-design.
2. Parcel 1 - the array and site layouts needed to be revised due to the CID canal encroaching outside of the easement. The access road at the top of the canal is located completely outside of the easement at the east end. This was not reflected in the layouts provided by EDF. As a result, the northern table from the eastern most 18 rows have had to be relocated to the east end of the array. Also, the perimeter road has to be shifted to account for the encroachment. This requires additional construction activities to accommodate. Cost impact of this change is being evaluated currently. No schedule impact.
3. Waterline discovered between parcels 3 & 4. This was not in the layout information provided by EDF. Pipe is approximately 5-6 ft. deep. Will need to trench 2 ft. below waterline in order to run conduit to PVIS. Costs associated with this are being evaluated currently.

**Goose Lake:**

1. Backup power systems will be required by Kern County for emergency stow. Price and quantity to be further defined as engineering activities progress. FS to arrange a meeting with EDF to address week of 6/2.

**Personnel Safety for the Current Report Period**

A synopsis of the Contractor's safety performance including 1) a summary of the numbers, types of injuries and lost time accidents and 2) a compilation of all safety forms completed.

**Meeting Status for the Current Report Period**

A summary of minutes of major meetings for the current Report Period.

**Progress Photographs for the Current Report Period**

Contractor shall supply digital color photographs (in hardcopy, CD or other electronic means) to document progress and to record significant Site progress and completed elements of Work. All photographs shall be dated and captioned.

**Module Breakage Report for the Current Report Period**

Please provide an excel listing of all modules that have been damaged during the current Report Period, including a description of the type of damage observed and the status of the return of the modules to the Module Supplier. Please also provide an aggregate account of the number of modules damaged to date.

**Other Long term actions:**

**Other actions:**

ID	Task Name	Duration	Start	Finish	Predecessors	Qtr 4, 2013				Qtr 1, 2014			Qtr 2, 2014			Qtr 3, 2014			Qtr 4, 2014			Qtr 1, 2015		
						Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	✓ <b>Land Control- Completed</b>	1 day?	Tue 10/16/12	Tue 10/16/12																				
2	✓ Land Control 30-year lease executed	1 day?	Tue 10/16/12	Tue 10/16/12																				
3	<b>Environmental Impact Report (EIR)</b>	<b>72 days</b>	<b>Wed 8/31/11</b>	<b>Thu 12/8/11</b>																				
4	Surveys, Processes	152 days	Mon 11/1/10	Tue 5/31/11																				
5	✓ Application Submitted to County	1 day	<b>Wed 8/31/11</b>	Wed 8/31/11																				
6	✓ Addendum to the Environmental Impact Report	76 days	Thu 3/7/13	Thu 6/20/13																				
7	✓ Date Notice of Determination filed	1 day	Mon 6/17/13	Mon 6/17/13																				
8	✓ <b>Interconnection</b>	<b>1 day</b>	<b>Wed 10/17/12</b>	<b>Wed 10/17/12</b>																				
9	✓ SGIA Executed	1 day	<b>Wed 10/17/12</b>	<b>Wed 10/17/12</b>																				
10	✓ <b>EPC Contract</b>	<b>245 days</b>	<b>Thu 4/11/13</b>	<b>Tue 3/18/14</b>																				
11	✓ EPC RFP	4 mons	Mon 10/14/13	Fri 1/31/14																				
12	✓ Contract Award (via TSA)	21 days	Sat 2/1/14	Mon 3/3/14																				
13	✓ Full Notice to Proceed	1 day	Tue 3/18/14	Tue 3/18/14																				
14	<b>EPC Design</b>	<b>165 days</b>	<b>Mon 3/3/14</b>	<b>Thu 10/16/14</b>																				
15	✓ 30% Design	2.8 mons	Mon 3/3/14	Mon 5/19/14																				
16	✓ Issue for Permit	1.25 mons	Tue 5/20/14	Mon 6/23/14																				
17	📅 Issue for Construction	4.15 mons	Wed 6/25/14	Thu 10/16/14																				
18	<b>Land Use and Construction Permitting</b>			<b>Tue 8/26/14</b>																				
19	📅 Building Permit	85 days	Wed 4/30/14	Tue 8/26/14																				
20	<b>Construction</b>	<b>217 days</b>	<b>Tue 6/3/14</b>	<b>Sun 3/29/15</b>																				
21	📅 Mobilization	1 day	Sun 8/31/14	Sun 8/31/14																				
22	Build Project	152 days	Sun 8/31/14	Sun 3/29/15																				
23	📅 COD	0 days	Sun 2/15/15	Sun 2/15/15																				
24	📅 GCOD	1 day?	Sun 3/29/15	Sun 3/29/15																				

ID	Task Name	Duration	Start	Finish	Predecessors	Qtr 4, 2013				Qtr 1, 2014			Qtr 2, 2014			Qtr 3, 2014			Qtr 4, 2014			Qtr 1, 2015		
						Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
1	✓ <b>Land Control- Completed</b>	1 day?	Wed 2/17/10	Wed 2/17/10																				
2	✓ Land Control 30-year lease executed	1 day?	Wed 2/17/10	Wed 2/17/10																				
3	✓ <b>Notice of Exemption (NOE)</b>	<b>57 days</b>	<b>Mon 4/12/10</b>	<b>Tue 6/29/10</b>																				
4	✓ Surveys, Processes	89 days?	Tue 11/10/09	Fri 3/12/10																				
5	✓ <b>Interconnection</b>	<b>1 day</b>	<b>Wed 10/17/12</b>	<b>Wed 10/17/12</b>																				
6	✓ SGIA Executed	1 day	Wed 10/17/12	Wed 10/17/12																				
7	✓ <b>EPC Contract</b>	<b>245 days</b>	<b>Thu 4/11/13</b>	<b>Tue 3/18/14</b>																				
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# 2015 Resource Adequacy and Flexible Capacity Obligations

Jeremy Waen | Regulatory Analyst

July 14, 2014



# Capacity & Resource Adequacy

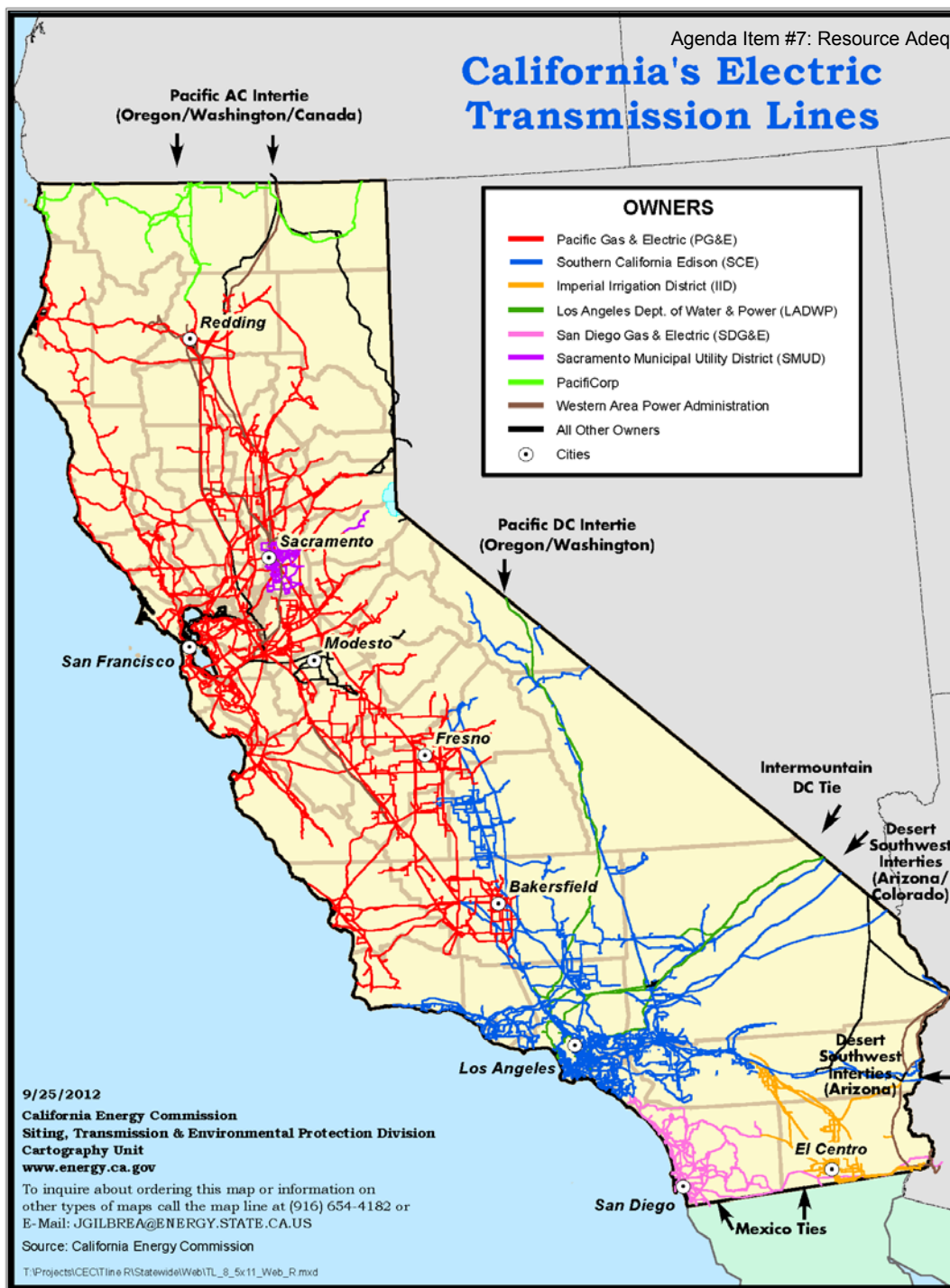
Capacity: the bandwidth of a generation resource to supply electricity to the grid

- System Capacity: the generation capacity needed for *overall grid reliability*
- Local Capacity: the portion of generation capacity needed to provide *local grid reliability*
- Flexible Capacity: the portion of generation capacity needed to provide *3-hour periods of grid reliability*

Resource Adequacy: the obligation by the CPUC to procure capacity for grid reliability



# California's Electric Transmission Lines



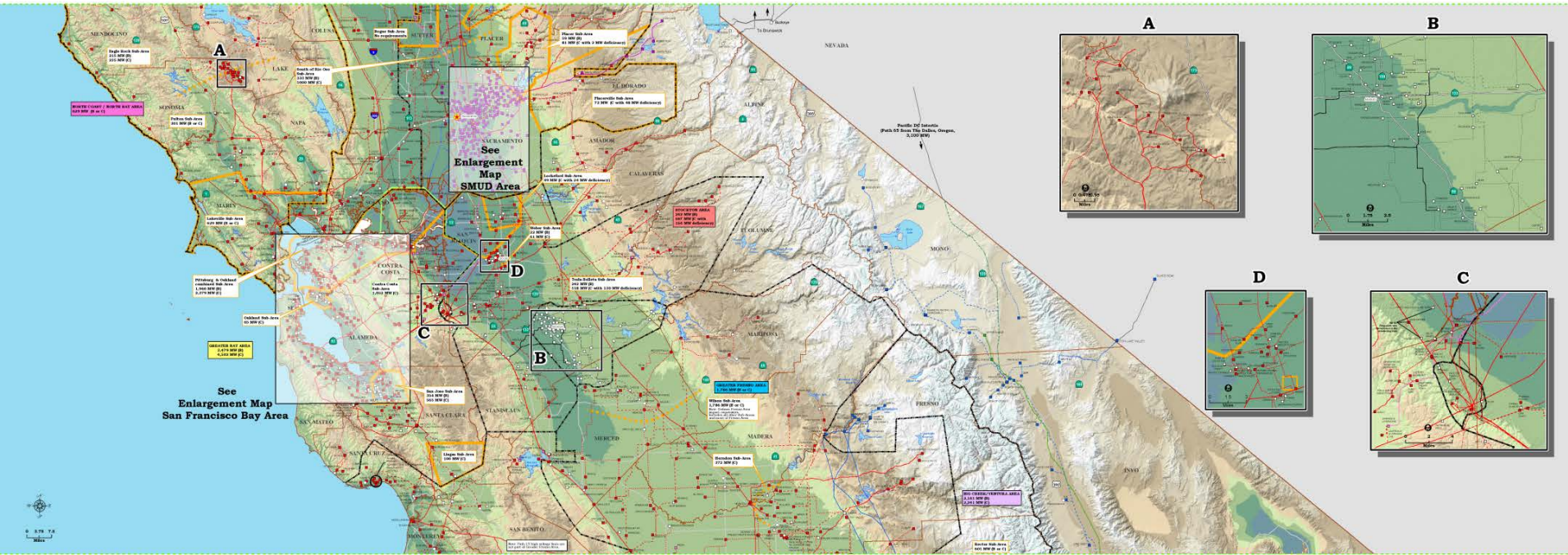
9/25/2012  
California Energy Commission  
Siting, Transmission & Environmental Protection Division  
Cartography Unit  
[www.energy.ca.gov](http://www.energy.ca.gov)

To inquire about ordering this map or information on other types of maps call the map line at (916) 654-4182 or E-Mail: [JGILBREA@ENERGY.STATE.CA.US](mailto:JGILBREA@ENERGY.STATE.CA.US)

Source: California Energy Commission

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# Agenda Item #7: Resource Adequacy and Flexible Capacity Requirements



# Resource Adequacy Obligations for CCAs

Overall obligation based on 115% of year-ahead load forecast

- Local obligation based on the CCA's share of the forecast load within the local area
- Flexible obligation based on the CCA's share of the forecast monthly peak demand
- System obligations are the remainder of the CCA's overall obligation after Local and Flexible RA are accounted for

Flexible \$\$\$ > Local \$\$ > System \$

# Resource Adequacy and MCE

Example: RA obligation based on June 2014

- Overall RA obligation is ~ 216 MW
  - Local RA obligation is ~ 71 MW
  - Flexible RA obligation is ~40 MW
  - System RA obligation is ~145 MW
  - $216 \text{ MW} - 71 \text{ MW} - 0 \text{ MW} = 145 \text{ MW}$
- MCE is obligated to show to CPUC and CAISO that it has resources contracted to meet these needs
  - Year-ahead showing of 90%
  - Month-ahead showing of 100%

# Flexible Capacity and MCE

Flexible Capacity: the portion of generation capacity needed to provide *3-hour periods of grid reliability*

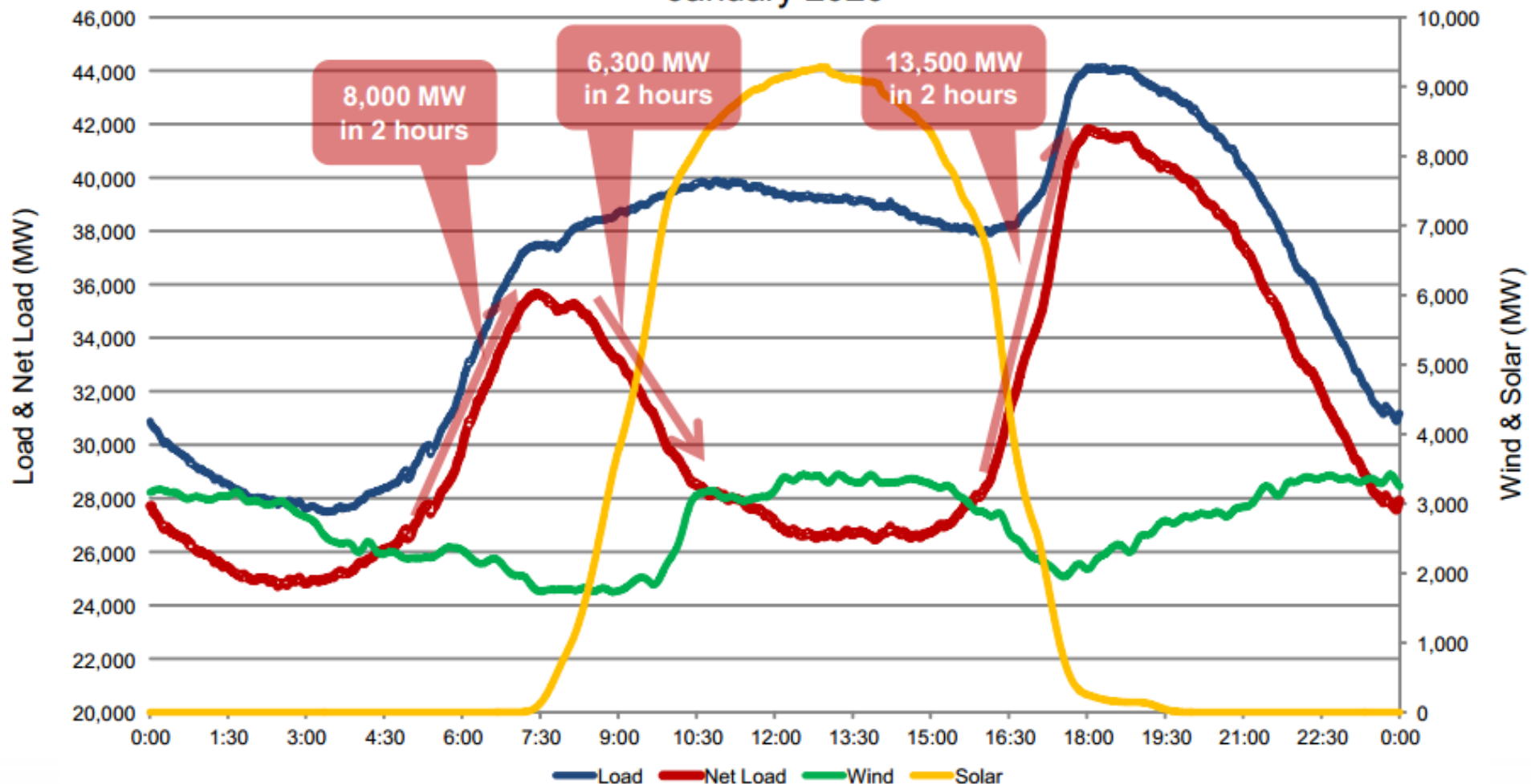
- Needed due to intermittent generation resources (wind and solar) decreasing electricity supply as demand increases

New Flexible RA obligation starting in 2015

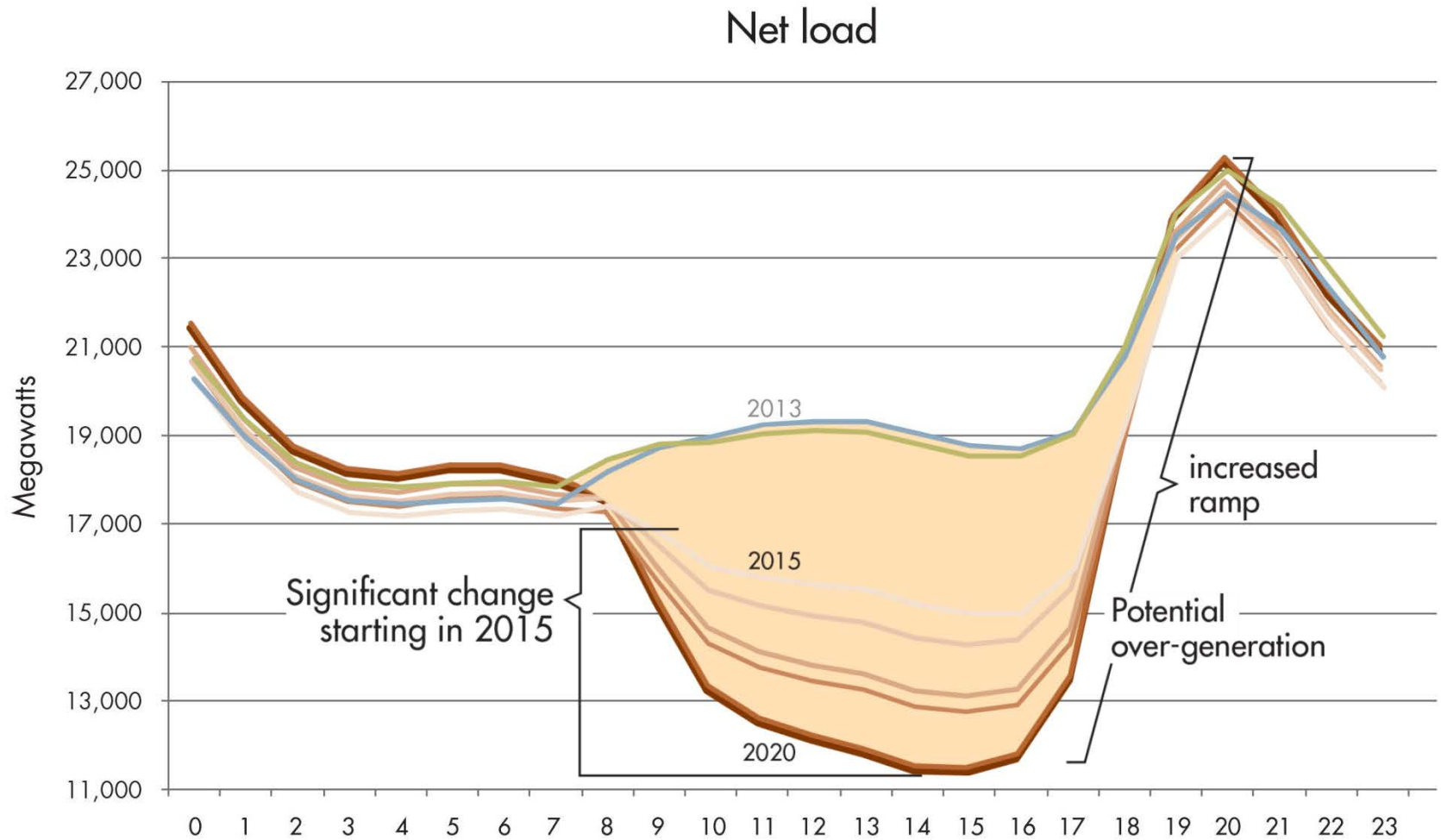
- By October 31, 2014 MCE must show it has 90% of 2015 Flexible Capacity obligations met by contracts
- Flexible RA obligations vary by month

# Flexible Capacity and the "Duck Graph"

CAISO Load, Wind & Solar Profiles – High Load Case  
January 2020



# Growing need for flexibility starting 2015



# Flexible Capacity Need by Month

## Monthly Flexible Requirement

