

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE  
STATE OF CALIFORNIA**

Order Instituting Rulemaking to Continue	)	
Implementation and Administration of California	)	Rulemaking 11-05-005
Renewables Portfolio Standard Program.	)	(Filed May 5, 2011)
	)	
	)	

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**SOUTHERN CALIFORNIA EDISON COMPANY’S (U 338-E) FINAL  
2012 RENEWABLES PORTFOLIO STANDARD PROCUREMENT  
PLAN**

**PUBLIC VERSION**

JENNIFER TSAO SHIGEKAWA  
CATHY A. KARLSTAD

Attorneys for  
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue  
Post Office Box 800  
Rosemead, California 91770  
Telephone: (626) 302-1096  
Facsimile: (626) 302-6962  
E-mail: Cathy.Karlstad@sce.com

November 29, 2012

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**SOUTHERN CALIFORNIA EDISON COMPANY’S (U 338-E) FINAL 2012  
RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN**

Pursuant to Ordering Paragraph 2 of Decision 12-11-016, Southern California Edison Company (“SCE”) respectfully submits its Final 2012 Renewables Portfolio Standard (“RPS”) Procurement Plan.<sup>1</sup>

SCE’s Final 2012 RPS Procurement Plan consists of the written plan and appendices thereto. The appendices include:

- Confidential/Public Appendix A - Redline of Final Written Plan to August 15, 2012 Plan<sup>2</sup>
- Confidential Appendix B - Project Development Status Update
- Confidential/Public Appendix C.1 - Quantitative Information Based on SCE’s Renewable Net Short Methodology
- Confidential/Public Appendix C.2 - Quantitative Information Based on the Commission’s Renewable Net Short Methodology

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<sup>1</sup> SCE is concurrently filing a Motion for Leave to File its Confidential Final 2012 Renewables Portfolio Standard Procurement Plan Under Seal, which requests a California Public Utilities Commission (“Commission”) order granting leave to file the confidential version of SCE’s Final 2012 RPS Procurement Plan under seal.

<sup>2</sup> Appendix A shows the changes between SCE’s Final 2012 RPS Procurement Plan and SCE’s First Amended 2012 RPS Procurement Plan submitted on August 15, 2012.

- Confidential/Public Appendix D - Standard Cost Quantification Table

Respectfully submitted,

JENNIFER TSAO SHIGEKAWA  
CATHY A. KARLSTAD

/s/ Cathy A. Karlstad

By: Cathy A. Karlstad

Attorneys for  
SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue  
Post Office Box 800  
Rosemead, California 91770  
Telephone: (626) 302-1096  
Facsimile: (626) 302-6962  
E-mail: Cathy.Karlstad@sce.com

Dated: November 29, 2012

**VERIFICATION**

I am a Manager in the Renewable and Alternative Power Department of Southern California Edison Company and am authorized to make this verification on its behalf. I am informed and believe that the matters stated in the foregoing pleading are true.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this **29<sup>th</sup> day of November, 2012**, at Rosemead, California.

/s/ Kathleen M. Sloan

By: Kathleen M. Sloan

SOUTHERN CALIFORNIA EDISON COMPANY

2244 Walnut Grove Avenue  
Post Office Box 800  
Rosemead, California 91770



SOUTHERN CALIFORNIA  
**EDISON**

An *EDISON INTERNATIONAL* Company

(U 338-E)

## **Final 2012 Written Plan**

**November 29, 2012**

**PUBLIC VERSION**

## Final 2012 Written Plan

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## **I. INTRODUCTION AND OVERVIEW OF 2012 RPS PLAN**

### **A. Introduction**

On April 5, 2012, the California Public Utilities Commission (“Commission” or “CPUC”) issued the Assigned Commissioner’s Ruling Identifying Issues and Schedule of Review for 2012 Renewables Portfolio Standard (“RPS”) Procurement Plans Pursuant to Public Utilities Code Sections 399.11 et seq. and Requesting Comments on New Proposals (the “Ruling”). That Ruling required retail sellers to file a RPS procurement plan for 2012 (the “2012 RPS Plan”) according to the schedule set forth therein and details the specific topics to be covered in such 2012 RPS Plans. Additionally, the Ruling included seven proposals for revising the procurement planning and review process and solicited feedback on these proposals.

Southern California Edison Company (“SCE”) filed the first version of its 2012 RPS Plan on May 23, 2012 and concurrently filed comments on the seven proposals. On July 18, 2012, SCE filed reply comments to various parties’ comments on that plan.

On August 2, 2012, the Commission issued the Administrative Law Judge’s Ruling (1) Adopting Renewable Net Short Calculation Methodology (2) Incorporating the Attached Methodology Into the Record, and (3) Extending the Date for Filing Updates to 2012 Procurement Plans (the “Renewable Net Short Ruling”). The Renewable Net Short Ruling adopted a renewable net short methodology and directed retail sellers to update their renewable net short calculations in accordance with the adopted methodology by August 15, 2012. The Renewable Net Short Ruling also extended the date for submitting other updates to the 2012 RPS Plans until August 15, 2012.

In accordance with the Renewable Net Short Ruling, SCE filed the first amended version of its 2012 RPS Plan on August 15, 2012. In particular, SCE included its renewable net short



calculations based on the Commission's adopted renewable net short methodology as Appendix C.2 – Quantitative Information Based on the Commission's Renewable Net Short Methodology. SCE also modified Appendix C.1 – Quantitative Information Based on SCE's Renewable Net Short Methodology – to include updated information.

At the same time, SCE made several other changes to its 2012 RPS Plan from the May 23, 2012 filing. Specifically, SCE determined that, given the State's focus on procurement from smaller-scale renewable facilities, SCE will not hold an RPS solicitation in this solicitation cycle. Instead, SCE will focus on meeting its need through its procurement programs for smaller renewable resources. These include various feed-in tariff ("FiT") and FiT-like programs which require multiple solicitations each year, and will result in more solicitations than SCE has ever administered in one year. Accordingly, SCE revised its 2012 Written Plan and appendices hereto to reflect the following additional changes to the plan submitted on May 23, 2012:

- Added an explanation of SCE's rationale for not holding a general renewable solicitation, open to all renewable resources, in this solicitation cycle;
- Removed SCE's 2012 Procurement Protocol and Pro Forma Renewable Power Purchase and Sale Agreement ("PPA") and discussion related to each;
- Added a new Appendix A – Redline of First Amended RPS Written Plan to May 23, 2012 Plan – to reflect the changes since the May 23, 2012 plan was filed; and
- Replaced Appendix B – Project Development Status Update – to reflect the most recent version of that document.

On November 8, 2012, the Commission adopted Decision ("D.") 12-11-016, which conditionally accepted the 2012 RPS Plans filed by SCE and the other investor-owned utilities

(“IOUs”).<sup>1</sup> The Commission accepted SCE’s request not to hold a 2012 RPS solicitation, but ordered SCE to remove the consideration of bilateral offers from its final 2012 RPS Plan.<sup>2</sup> The Commission also authorized the IOUs to undertake competitive solicitations and bilateral contracts for the sale of excess RPS products.<sup>3</sup> The IOUs were directed to file final 2012 RPS Plans within 15 days of the mailing date of D.12-11-016.<sup>4</sup>

Pursuant to D.12-11-016, SCE is hereby submitting this final 2012 RPS Plan. SCE has revised its 2012 Written Plan and appendices hereto to reflect the following changes to the plan submitted on August 15, 2012:

- Removed the consideration of bilateral offers;
- Provided that SCE may hold a solicitation for the sales of excess RPS products or enter into bilateral transactions for the sale of excess RPS products as authorized in D.12-11-016 and removed proposal that sales of excess RPS products from existing facilities be approved via the Tier 2 advice letter process;
- Added a new Appendix A – Redline of Final Written Plan to August 15, 2012 Plan – to reflect the changes since the August 15, 2012 plan was filed; and
- Made other minor updates to reflect the adoption of D.12-11-016 and the passage of time.

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<sup>1</sup> The Commission also accepted the 2012 RPS Plans submitted by the electric service providers and small and multi-jurisdictional utilities.

<sup>2</sup> D.12-11-016 at 2, 53-57, 86 (Conclusions of Law 19-20), 94 (Ordering Paragraph 15).

<sup>3</sup> *Id.* at 60-62, 94 (Ordering Paragraph 17), The Commission did not accept SCE’s proposal that sales of excess RPS products from existing facilities be approved via the Tier 2 advice letter process.

<sup>4</sup> *Id.* at 88 (Ordering Paragraph 2).

## **B. Overview of 2012 RPS Plan**

As SCE continues to make progress toward the State's RPS goals, and in planning for renewable procurement in 2012 and beyond, SCE has taken into account the regulatory framework established by the new 33% RPS statute. Senate Bill ("SB") 2 (1x) was enacted in the First Extraordinary Session of the Legislature on April 12, 2011, and became effective on December 10, 2011. SB 2 (1x) made significant changes to the RPS program, including departing from the prior structure of annual RPS goals and moving to multi-year compliance periods. The overall percentage of required procurement from renewable resources was also increased from 20% to 33%, with interim procurement targets established for each multi-year compliance period ("New Procurement Targets").<sup>5</sup>

SB 2 (1x) also established three portfolio content categories of renewable electricity products that may be used to satisfy the State's RPS goals.<sup>6</sup> The first portfolio content category ("Category 1") includes products from renewable generators with a first point of interconnection to the Western Electric Coordinating Council transmission system within the boundaries of a California Balancing Authority Area ("CBA"), or with a first point of interconnection with the electricity distribution system used to serve end users within the boundaries of a CBA, or where the renewable generation is dynamically transferred to a CBA, or scheduled into a CBA on an

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<sup>5</sup> See Cal. Pub. Util. Code § 399.15(b)(1)-(2); D.11-12-020 at 23-25 (Ordering Paragraphs 1-4). In particular, as implemented by the Commission in D.11-12-020, the new RPS procurement quantity requirements applicable to all retail sellers are as follows: (1) 20% of overall retail sales for the first compliance period from 2011-2013; (2) 21.7% of 2014 retail sales plus 23.3% of 2015 retail sales plus 25% of 2016 retail sales for the second compliance period from 2014-2016; (3) 27% of 2017 retail sales plus 29% of 2018 retail sales plus 31% of 2019 retail sales plus 33% of 2020 retail sales for the third compliance period from 2017-2020; and (4) 33% of retail sales in each year thereafter.

<sup>6</sup> The Commission adopted D.11-12-052 implementing and further defining the portfolio content categories on December 21, 2011. Retail sellers are subject to a minimum portfolio content category target (varying by compliance period) for Category 1 products and a maximum portfolio content category target (varying by compliance period) for Category 3 products. The remainder may be satisfied by Category 2 products. Accordingly, SCE's renewable procurement must consider both the New Procurement Targets and the portfolio content category targets under the new 33% RPS program.

hourly basis without substituting electricity from another source. The second portfolio content category (“Category 2”) includes firmed and shaped products, and the third portfolio content category (“Category 3”) includes all other renewable products, including unbundled renewable energy credits (“RECs”).

Furthermore, SB 2 (1x) made several other changes to the RPS program’s structure. Among other things, SB 2 (1x) removed deficits associated with any previous RPS for retail sellers procuring at least 14% of retail sales from eligible renewable energy resources in 2010,<sup>7</sup> permits banking of excess procurement across compliance periods subject to certain conditions,<sup>8</sup> grants a waiver of compliance under certain circumstances,<sup>9</sup> determines that contracts signed prior to June 1, 2010 count in full toward RPS procurement requirements,<sup>10</sup> and directs the Commission to establish a cost limitation for each electrical corporation.<sup>11</sup> All of these provisions have not yet been implemented by the Commission. Accordingly, SCE’s procurement needs and planning may change as SB 2 (1x) is fully implemented by the Commission.

Through SCE’s analysis of its renewable net short position and procurement needs, as discussed herein, SCE has determined that it has a long-term renewable procurement need. Accordingly, in its 2012 RPS Plan, SCE has indicated that it will continue to procure through its variety of programs for small-scale renewable resources, focused primarily on projects that are less than 20 MW. With such significant market responses to these programs and the substantial resources needed to facilitate them, SCE does not intend to launch a general solicitation open to

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<sup>7</sup> Cal. Pub. Util. Code § 399.15(a).

<sup>8</sup> *Id.* § 399.13(a)(4)(B).

<sup>9</sup> *Id.* § 399.15(b)(5).

<sup>10</sup> *Id.* § 399.16(d).

<sup>11</sup> *Id.* §§ 399.15(c)-(d).

all renewable resources in this cycle. Given SCE's renewable procurement needs and the State's emphasis on smaller-scale renewable generation, SCE has concluded that its resources would be better utilized focusing on the legislatively- and Commission-adopted renewable energy procurement programs for these resources that it administers throughout the year, as SCE expects to hold multiple solicitations per year to meet the goals of each program. These programs include: (1) the Renewable Auction Mechanism ("RAM") program; (2) SCE's Solar Photovoltaic Program ("SPVP"); and (3) the California Renewable Energy Small Tariff ("CREST") which will soon be expanded pursuant to Public Utilities Code Section 399.20 and re-named the Renewable Market Adjusting Tariff ("Re-MAT"). SCE will also be conducting other Requests for Offers ("RFOs") open to RPS-eligible resources including RFOs for qualifying facilities ("QFs") and All-Source RFOs.

## **II. ASSESSMENT OF RPS PORTFOLIO SUPPLIES AND DEMAND**

### **A. Description of SCE's Portfolio and Forecast of Need**

SCE has made and continues to make progress towards the State's RPS goals. In 2011, SCE procured 21.1% of its retail sales from RPS-eligible resources. To date, SCE's RPS-eligible deliveries and executed renewable procurement contracts have resulted from SCE's various large RPS solicitation Requests for Proposals ("RFPs"), SCE's Renewables Standard Contract ("RSC") program, the utility-owned generation and independent power producer portions of SCE's SPVP, the Public Utilities Code Section 399.20 FiT program, the RAM program adopted by the Commission, QF contracts, utility-owned small hydro projects, and bilateral negotiations.

SCE's forecast of its renewable procurement position and need is included as Appendix C.1 – Quantitative Information Based on SCE's Renewable Net Short Methodology – and

Appendix C.2 – Quantitative Information Based on the Commission’s Renewable Net Short Methodology. Appendix C.2 includes all required assumptions for the Commission’s renewable net short methodology. Appendix C.1 includes SCE’s renewable net short methodology assumptions.<sup>12</sup>

Specifically, both forecasts are based on the New Procurement Targets for the 33% RPS program. Both forecasts also include all projects that have executed contracts in the calculations and assume a 100% success rate for projects that are currently on-line. In addition, in both forecasts, SCE has applied a 100% success rate to generic pre-approved generation (i.e., generation from the RAM program, the FiT program, and SCE’s SPVP) before contracts are signed.<sup>13</sup> Both forecasts also incorporate current expected on-line dates for all projects that are not yet on-line.

Moreover, as discussed in more detail below, SCE’s forecasts under Appendix C.1 and Appendix C.2 account for potential issues that could delay RPS compliance, project development status, the minimum margin of procurement, and other potential risks through the use of a success rate for delivered energy from contracts that are executed but not yet on-line. The success rate varies from 65% for the first compliance period, to 56% for the second compliance period, and 50% for the third compliance period and each period thereafter.

The only difference between SCE’s forecasts in Appendix C.1 and Appendix C.2 are that: (1) SCE’s renewable net short methodology as reflected in Appendix C.1 uses SCE’s bundled retail sales forecast for all years while the Commission’s renewable net short methodology as reflected in Appendix C.2 uses SCE’s bundled retail sales forecast for 2012

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<sup>12</sup> In its August 15, 2012 filing, SCE updated Appendix C.1 from the version filed as Appendix C on May 23, 2012 to reflect the Commission’s adoption of D.12-06-038 and other updated information and assumptions.

<sup>13</sup> After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

through 2016 and 2022 through 2030 and the 2010 Long-term Procurement Plan (“LTPP”) standardized planning assumptions for 2017 through 2021;<sup>14</sup> and (2) SCE’s renewable net short methodology as reflected in Appendix C.1 assumes 100% re-contracting of existing contracts with projects 20 MW and less while the Commission’s renewable net short methodology as reflected in Appendix C.2 includes no re-contracting assumptions.

As shown in Appendix C.1, using SCE’s renewable net short methodology, SCE anticipates a procurement quantity requirement for the first compliance period of [REDACTED] kWh and RPS-eligible procurement of 49.6 billion kWh, for a net long position of about [REDACTED] kWh. In the second compliance period, SCE forecasts a procurement quantity requirement of [REDACTED] kWh and RPS-eligible procurement of 62.8 billion kWh, for a net long position of about [REDACTED] kWh. In the third compliance period, SCE forecasts a procurement quantity requirement of 99 billion kWh and RPS-eligible procurement of 84.3 billion kWh, for a net short position of about 14.7 billion kWh without the use of banking. With the use of banking, that net short position may be reduced to 0.4 billion kWh. SCE also forecasts a net short position for 2021 and 2022.

Using the Commission’s renewable net short methodology as set forth in Appendix C.2, SCE forecasts a net long position of approximately [REDACTED] kWh for the first compliance period and a net long position of approximately [REDACTED] kWh for the second compliance period. In the third compliance period, SCE forecasts a net short position of approximately 11.7 billion kWh without the use of banking. SCE may be able to fill that net short position through

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<sup>14</sup> The Commission’s renewable net short methodology states that utilities can use their own forecasts for bundled retail sales for the first five years and should use the LTPP standardized planning assumptions thereafter. In Appendix C.2, SCE has used its own bundled retail sales forecast for 2022 through 2030 because there is no LTPP forecast for those years.

the use of banking. SCE also forecasts a net short position for 2021 and the years thereafter under the Commission's methodology.

Accordingly, under either methodology, SCE does not have a short-term renewable procurement need, but it does anticipate a longer term need for additional RPS-eligible resources.

Even given SCE's short-term procurement position, SCE has concerns about the barriers to achieving the State's RPS goals in the long-term. Based on SCE's experience in RPS solicitations to date, transmission availability will continue to be an impediment to bringing new renewable resources on-line.<sup>15</sup> Increased procurement activity (i.e., execution of more contracts) will not accelerate the planning, permitting, and construction processes for new transmission and transmission upgrades. While SCE will continue to seek and contract for renewable resources in the long-term, SCE expects most project proposals to be limited by the scarcity of transmission. Additionally, the long and complicated process for siting and permitting of renewable generation projects, the continued uncertainty surrounding the federal production and investment tax credits, a heavily subscribed interconnection queue, developer performance issues, curtailment, and lack of flexibility in established regulatory processes related to procurement are all major challenges to meeting California's renewable energy goals. These procurement goals will not be achieved without addressing these significant challenges. SCE addresses the impediments to reaching the State's RPS goals and the steps SCE is taking to mitigate these impediments in more detail in Section III below.

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<sup>15</sup> The Commission has repeatedly recognized this in its Quarterly Reports to the Legislature. *See, e.g.*, Renewables Portfolio Standard Quarterly Report at 10 (Q3 2010); Renewables Portfolio Standard Quarterly Report at 8 (Q2 2010); Renewables Portfolio Standard Quarterly Report at 8 (Q1 2010); Renewables Portfolio Standard Quarterly Report at 7 (Q4 2009).



**B. SCE's Plan for Achieving RPS Procurement Goals**

In its 2012 RPS procurement activities through the procurement programs discussed above, SCE intends to contract for renewable energy necessary to achieve the State's RPS goals, taking into account the renewable energy procured through SCE's prior RPS solicitations and other procurement mechanisms, success rate assumptions for executed contracts that are not yet on-line, as well as future RPS solicitations that are expected to take place. Generally, SCE's planned procurement activities for 2012 will include procurement from the procurement programs discussed above, including the RAM program, the FiT program, SCE's SPVP, QF standard contracts, and any new processes approved by the Commission. Furthermore, as discussed in Section XI below, SCE may also sell bundled renewable energy, RECs, or other renewable energy products to maximize value to its customers and optimize its portfolio.

All of the procurement in SCE's renewable portfolio to-date is from contracts executed prior to June 1, 2010 or Category 1 products. SCE prefers Category 1 products because they provide the most flexibility and certainty for SCE's customers. SCE forecasts that it will meet its RPS procurement quantity needs primarily through Category 1 products, either through a future solicitation, future bilateral transactions, or FiT or other procurement programs. SCE may procure Category 2 or 3 products as needed to meet compliance period needs, while staying within the limits set by SB 2 (1x) as implemented by the Commission.

In SCE's prior experience meeting the 20% renewable energy goal, it is prudent to contract with projects early on in the process to support the development of needed transmission. SCE considers its long-term net short position in light of how long it takes to bring new projects on-line, how far in the future the short position exists, and how many solicitations SCE anticipates being able to complete in order to meet the short position (including solicitations and

other procurement opportunities from the procurement programs discussed above). SCE then makes a pro-rata allocation of SCE's need over the remaining anticipated solicitations. For example, if SCE is short 300 GWh/year over the measured time period, and SCE anticipates being able to conduct three solicitations, it would solicit 100 GWh/year in each of the three solicitations.

SCE determines its need for resources with specific deliverability characteristics (such as peaking, dispatchable, baseload, firm, and as-available) through its least-cost best-fit ("LCBF") approach. SCE uses its LCBF methodology to compare project profiles, including duration, location, technology, on-line date, viability, deliverability and price, to estimate the value of each project to SCE's customers and its relative value in comparison to other proposals. This process ensures that each project selected most cost-effectively aligns with SCE's procurement needs.

### **III. POTENTIAL COMPLIANCE DELAYS**

Six primary factors will challenge achievement of the RPS goals established under SB 2 (1x): (1) permitting, siting, approval, and construction of transmission and renewable generation projects; (2) the uncertainty surrounding the federal production and investment tax credits; (3) a heavily subscribed interconnection queue; (4) developer inexperience and performance issues; (5) curtailment; and (6) regulatory inflexibility. SCE discusses each of these potential issues that could cause compliance delays, in turn, below and describes the steps it has taken to mitigate the impacts of these challenges.

#### **A. Permitting, Siting, Approval, and Construction of Transmission and Renewable Generation Projects**

The lack of sufficient transmission infrastructure and the prolonged process for permitting and approval of new transmission lines continues to be the most significant

impediment to reaching California's RPS goals. SCE has received relatively few proposals from renewable generators that do not require significant transmission upgrades or new transmission development for the renewable energy to be deliverable. Based on the market responses in SCE's RPS solicitations and other renewable programs, lack of adequate transmission infrastructure and the lengthy process of siting, permitting, and building new transmission continues to be a real and complicated impediment to bringing new renewable resources on-line.

The challenges surrounding transmission are only compounded as the State's RPS goal increases from 20% to 33%, which represents a 65% increase in procurement of renewable energy without taking into account load growth.<sup>16</sup> The Commission has stated that "[s]erving 33% of California's energy needs with renewable sources will require an infrastructure build-out on a scale and timeline perhaps unparalleled anywhere in the world."<sup>17</sup> Indeed, the Commission noted that the "magnitude of the infrastructure that California will have to plan, permit, procure, develop, and integrate in the next ten years is immense and unprecedented," including approximately \$115 billion in new infrastructure investment in an uncertain financial environment, including seven major new transmission lines (in addition to the four major new transmission lines needed to reach 20% renewables).<sup>18</sup>

Over the past few years, SCE has taken several actions to address the impediment of transmission to achieving California's renewable energy goals. For example, SCE has attempted to expedite the permitting and construction of renewable transmission facilities by: (1) proactively providing the upfront financing for needed transmission network upgrades, (2) seeking authorization to record costs associated with interconnection and environmental studies

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<sup>16</sup> If load growth is taken into account, this percentage is even higher.

<sup>17</sup> Renewables Portfolio Standard Quarterly Report at 3 (October 2008).

<sup>18</sup> 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 1-4 (June 2009).

for renewable projects, (3) providing leadership to the California Independent System Operator's ("CAISO") reform of the Large Generator Interconnection Procedures, (4) requesting authority to study the feasibility of developing transmission capacity to deliver output from potential renewable resources. Despite these efforts, SCE expects that transmission will continue to be an impediment to achieving the State's RPS goals.

The long and complicated permitting process for renewable generation facilities is also a barrier to meeting the State's RPS goals. The Commission has observed that most RPS project delays "are due to lack of transmission or generation permitting at the county, state, or federal level."<sup>19</sup> Moreover, the Commission also noted that environmental concerns, legal challenges, and public opposition can impact the timeline for bringing renewable generation and transmission projects on-line.<sup>20</sup>

**B. Uncertainty Surrounding the Federal Production and Investment Tax Credits**

Another factor that could jeopardize the ability of SCE and other retail sellers to reach the State's RPS goals is the uncertainty surrounding the federal production and investment tax credits. Renewable procurement contracts often have no-fault termination rights if the tax credits are not extended. Sending signals to the renewables market that these credits will be available over the long-term will stimulate sustained investment in renewable resources rather than the "boom and bust" cycle induced by the uncertainty regarding whether the federal tax credits will be available.

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<sup>19</sup> Renewables Portfolio Standard Quarterly Report at 7 (Q4 2009).

<sup>20</sup> 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 4 (June 2009).

The American Recovery and Reinvestment Act of 2009 (“ARRA 2009”) extended the production tax credit for wind until the end of 2012, and for other technologies until the end of 2013.<sup>21</sup> The investment tax credit for solar was also extended until the end of 2016. In Section 1603 of the ARRA 2009, the U.S. Treasury Department launched a new program whereby eligible energy property can receive a cash grant (the “Cash Grant”) in lieu of the investment tax credit. The Cash Grant has been well received by renewable generation developers. To qualify for the Cash Grant, the construction of the eligible property had to begin by December 31, 2010, and the property must be placed “in service” based on a schedule dependent on the type of generation (by January 1, 2013 for large wind and January 1, 2017 for solar).<sup>22</sup> These aggressive construction and in-service requirements have led the generation community to place increasing political pressure on regulatory bodies such as the Commission, the California Energy Commission (“CEC”), the Bureau of Land Management, along with SCE, to expedite the regulatory process to enable generators to come on-line sooner in order to take advantage of this stimulus program.

The expiration dates set forth in the ARRA have not been extended beyond these dates and the “on again, off again” nature of these tax credits continues to be a barrier to renewable development. In particular, the expiration of the production tax credit for wind at the end of 2012 currently impacts any newly proposed wind generating facilities given the time needed for Commission approval of contracts, siting, permitting, construction, and development of needed transmission. Additionally, the uncertain future of the federal production and investment tax credits will likely continue to be a long-term barrier to meeting the RPS goals.

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<sup>21</sup> See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5 (2009).

<sup>22</sup> See Payments for Specified Energy Property in Lieu of Tax Credits under the American Recovery and Reinvestment Act of 2009, U.S. Treasury Department Guidance Document (July 2009) (available at <http://www.treasury.gov/recovery/docs/guidance.pdf>).

Although the uncertainty associated with production tax credits and investment tax credits was outside the control of California state agencies, SCE's policy advisors in Washington, D.C. worked with senators and legislators advocating for the extension of these tax credits. SCE also supported California Assembly Joint Resolution 50 that urged the U.S. Senate and President to extend the credits. As explained above, the ARRA 2009 extended the production tax credit for wind until the end of 2012, and for other technologies until the end of 2013. The investment tax credit for solar was also extended until the end of 2016.

**C. A Heavily Subscribed Interconnection Queue**

A heavily subscribed CAISO interconnection queue is also a major barrier to achieving the State's RPS goals. In its recent requested tariff amendment, CAISO estimated that it would take "as long as six to eight years from October 1, 2010 to complete the studies for all small generators currently in the ISO's queue under the ISO's current SGIP [Small Generator Interconnection Process] process."<sup>23</sup> As of May 8, 2012, SCE had over 850 interconnection requests, comprising more than 27,000 MW, inclusive of CAISO and Wholesale Distribution Access Tariff ("WDAT") requests. Although the CAISO's interconnection reform effort is currently being implemented, whether or not the reforms will meet the expectations and goals of all stakeholders remains to be seen.

To address the interconnection queue impediment, SCE played a leadership role among California Participating Transmission Owners in the stakeholder process that led to reforms of the CAISO Large Generator Interconnection Procedures, which were approved by the Federal Energy Regulatory Commission ("FERC") in 2008 and are currently being implemented. In

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<sup>23</sup> Tariff Amendment to Revise Generator Interconnection Procedures at 5 (October 19, 2010) (available at <http://www.caiso.com/2834/2834c11a4c2f0.html>).

addition, SCE is heavily involved in the Rule 21 settlement process, which will reform the interconnection process for renewable generators interconnecting under Rule 21. SCE has also been supportive of generator interconnection reform at the CAISO, including the integration of transmission and generator interconnection planning (“TPP/GIP”).

**D. Developer Inexperience and Performance Issues**

Achieving California’s renewable energy goals is also dependent on the strong performance by renewable developers. SCE has executed contracts with a large number of developers. To qualify for the RPS program, these developers must plan for, permit, construct, and operate their facilities according to milestones set forth in the contracts. Hurdles encountered during these activities require developers to alter their milestone schedules, and new developers do not necessarily know how to navigate the interconnection and permitting processes. For example, SCE has recently had to terminate several contracts due to performance issues on the part of inexperienced developers. To the extent that delays and termination events occur, the amount of delivered energy on which SCE can rely to reach the State’s goals may be affected.

To proactively address development performance issues, SCE continues to reach out and communicate with project developers on a regular basis, discuss options and the status of project development, and provide guidance and direction as appropriate. SCE has also made several modifications to its solicitation materials in response to lessons learned from developers in previous solicitations. To overcome some of the development barriers, SCE has created an option to have SCE act as Scheduling Coordinator, allowed for delivery points at the point of interconnection with the transmission provider’s electric grid, and tailored certain terms and conditions to address market changes in equipment availability and supply. SCE also intends to

add a requirement for future solicitations that projects have at least a completed Interconnection Study (as demonstrated by a completed System Impact Study, Facilities Study, Phase I or Phase II Interconnection Study, documentation showing that the project has passed Fast Track screens, or a signed Interconnection Agreement) in order to bid into the solicitation, as approved in D.12-11-016, and to propose that projects have at least a completed Phase II Interconnection Study (or equivalent or better) prior to execution of the contract. By ensuring that shortlisted projects have completed interconnection studies, the risk of project failure due to interconnection issues could be mitigated.

SCE has also worked with developers to overcome local opposition to renewable projects through active education with city governments regarding the State's goals and the importance of renewable energy in California. Furthermore, SCE continually educates the renewable development community on its procurement opportunities. In order to explain SCE's various renewable contracting opportunities, SCE speaks to developers at industry-wide symposiums (e.g., American Wind Energy Association, the U.S. military's Enhanced-Use-Lease, Geothermal Resources Council, Solar One), hosts bidders' conferences in connection with each RPS solicitation and other programs, fields countless individual inquiries, hosts outreach sessions for diverse business enterprises, and participates in developer forums.

To maximize contracting opportunities, SCE voluntarily implemented its RSC program, and in 2009 and 2010, executed 35 contracts resulting from that program for approximately 459 MW of renewable energy.<sup>24</sup> This program has since been replaced by the Commission's implementation of the RAM program. SCE also implemented a competitive solicitation offering

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<sup>24</sup> Four of those contracts for about 65 MW were subsequently terminated.



long-term power contracts to independent solar photovoltaic (“PV”) power providers as part of SCE’s SPVP.

**E. Curtailement**

Congestion at the transmission and generation levels is increasing and curtailment events are becoming more and more common. Under the Generator Interconnection Agreements between CAISO, the transmission provider and a project developer, projects are able to come on-line as an energy-only (“EO”) resource until associated deliverability interconnection upgrades are complete. Until the upgrades are complete, this large number of EO projects may result in the CAISO curtailing these projects at any time and to any degree for reliability purposes.

Several of SCE’s contracted wind projects in the Tehachapi region in Kern County, California, for example, have been forced to curtail deliveries significantly in order to accommodate transmission construction and maintenance and system reliability in this area. SCE expects that this same issue will occur in the Devers Colorado River area during the construction phases of that transmission project. Due to the significantly larger scale of the Devers Colorado River line, the potential curtailment risk could be much greater in scope.

Frequent curtailment events such as these may impact SCE’s ability to meet its RPS compliance goals due to lessened renewable energy deliveries. Additionally, the curtailments could impact the ability of owners of operating renewable projects to maintain adequate revenue to service their debt, and may create a chilling effect on future financing of projects under development until the transmission upgrades are complete.

SCE has kept these project owners informed of the latest transmission outage schedules, and has worked to mitigate the financial impacts of these curtailments on these projects. The mitigation efforts include discussion with the CAISO to evaluate curtailment need on the basis of

all projects in a transmission area, instead of on a project-by-project basis, and proposing more effective allocation methods that take into account each resource's actual, current generating potential. When the CAISO establishes an operating level that may require curtailment, it calculates the allowable capacity on the transmission line during a set period of time. That capacity is then often distributed on a pro-rata basis to each project to operate up to the appropriate percentage of its contract capacity. Because not all resources peak at the same time, imposing fixed maximum generation levels results in significant over-curtailment. Since all of the generators on the Tehachapi Renewable Transmission Project system are new and have modern control systems, it is quite practical to automate this process and send each project a real-time signal representing its individual cap. In this scenario, as long as the unrestricted output from all of the projects is less than the system limit, the projects may operate at 100% of the intermittent resource output.

SCE resolved a similar problem with the legacy QF generators in the Tehachapi area by combining them all into one group and curtailing them as a group. In this case, the generators were connected to the distribution system, so the curtailments were administered by SCE, not the CAISO. SCE worked with the generators to develop an arrangement under which some generators with modern control systems curtail on behalf of all generators in the group. This allows the other generators to continue to generate at full output while generators with modern control systems curtail only when coincident generation on the system exceeds the limit. Even for curtailing generators, the amount of curtailment under this arrangement is less than it would have been without the arrangement. This collaborative solution has helped SCE ensure safety and reliability while reducing expected curtailments by approximately 90%.

**F. Regulatory Inflexibility**

The IOUs need the ability to make changes to their commercial documents to reflect changes in the renewable energy market. The credit and financing markets can undergo significant changes in the time between the filing and approval of the RPS procurement plans that necessitate changes to the IOUs' solicitation materials. Changes can also be required because of new regulatory developments. It does not benefit any party to require the IOUs to issue solicitations with stale commercial documents that require substantial modifications before they can be executed. To the contrary, such inflexibility tends to increase transaction costs and commercial disputes and results in expensive litigation. SCE suggests that the Commission consider ways to streamline the approval process so that IOUs can react more quickly to market and regulatory changes and reflect those changes in their solicitation materials.

**IV. PROJECT DEVELOPMENT STATUS UPDATE**

SCE has attached as Appendix B – Project Development Status Update, a written status update on the development of all RPS-eligible projects currently under contract but not yet delivering generation. Some of the information in this status update has been reported to SCE by its counterparties. The status of these projects impacts SCE's renewable portfolio position and procurement decisions by allowing SCE to adjust its procurement once it is determined that projects will or will not meet their contractual obligations.

**V. RISK ASSESSMENT**

SCE describes the risk of projects failing to build or having construction delays in Section III above.

## VI. QUANTITATIVE INFORMATION

### Appendix C.1 - Quantitative Information Based on SCE's Renewable Net Short

Methodology – provides a quantitative analysis of SCE's renewable procurement need, based on the following assumptions:

- SCE's bundled retail sales forecast;
- 100% success rate for any project already on-line until the expiration date of the associated contract;
- A success rate ranging from 65% to 50% over the various compliance periods for delivered energy with respect to projects with executed contracts that are not yet on-line;
- 100% success rate for projects originating from the mandated programs referred to as "Program Generics" in Appendix C.1, such as SCE's SPVP, the FiT program, and the RAM program before contracts from such programs are signed;<sup>25</sup> and
- 100% success in re-contracting with projects 20 MW or less.

### Appendix C.2 - Quantitative Information Based on the Commission's Renewable Net

Short Methodology – provides a quantitative analysis of SCE's renewable procurement need based on the Commission's adopted renewable net short methodology assumptions, including, among other assumptions:

- SCE's bundled retail sales forecast for 2012 through 2016 and 2022 through 2030 and the 2010 LTPP standardized planning assumptions for 2017 through 2021;<sup>26</sup>

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<sup>25</sup> After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

<sup>26</sup> The Commission's renewable net short methodology states that utilities can use their own forecasts for bundled retail sales for the first five years and should use the LTPP standardized planning assumptions thereafter. In

- 100% success rate for any project already on-line until the expiration date of the associated contract;
- A success rate ranging from 65% to 50% over the various compliance periods for delivered energy with respect to projects with executed contracts that are not yet on-line;
- 100% success rate for projects originating from generic pre-approved generation such as SCE's SPVP, the FiT program, and the RAM program before contracts from such programs are signed;<sup>27</sup> and
- No re-contracting assumptions.

Appendix C.1 and Appendix C.2 detail SCE's assessment of its multi-year portfolio supplies in place to meet the goals established in SB 2 (1x) using both its own renewable net short methodology and the Commission's renewable net short methodology and establish SCE's net long and short positions during the first three compliance periods.

## **VII. MINIMUM MARGIN OF PROCUREMENT**

SCE's future renewable procurement efforts will be guided by its forecast of its renewable procurement needs, as described in Section II and Section VI and Appendix C.1 and Appendix C.2.

SCE currently accounts for the risk of project failure associated with projects that are not yet on-line by assuming a success rate delivered energy from such contracts. The success rate varies from 65% for the first compliance period, to 56% for the second compliance period, and

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Appendix C.2, SCE has used its own bundled retail sales forecast for 2022 through 2030 because there is no LTPP forecast for those years.

<sup>27</sup> After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

50% for the third compliance period and each period thereafter. This success rate is modeled to represent project development success rates as well as any contingency that would make meeting the State's RPS goals less likely (e.g., delays due to transmission, curtailment, material shortages, load growth beyond that which is forecasted, or less than expected output from resources). SCE uses this assumption to calculate its net short/net long position. At this time, it also provides an appropriate minimum margin of procurement "necessary to comply with the renewables portfolio standard to mitigate the risk that renewable projects planned or under contract are delayed or cancelled."<sup>28</sup> Moreover, SCE procures based on a forecast using the success rate so SCE's procurement takes into account these risks. SCE has used other success rates in the past and expects that this success rate may need to be modified in the future, to reflect changes to SCE's portfolio.

The Commission should avoid mandating a method for IOUs to calculate the minimum margin of procurement and should not attempt to impose a one-size-fits-all approach. As many of the projects in SCE's portfolio become operational, SCE will face different risks. The risks associated with project failure will be replaced by less significant risks of projects generating below full capacity. Similarly, SCE expects that the portfolio risk picture is not the same for each IOU. For example, risks may vary depending on whether a portfolio contains a high proportion of contracts that are online (as discussed above) or depending on the various technologies being used (e.g., geothermal technology, which provides a fairly firm resource versus wind or solar technologies, which are more intermittent). For these reasons, each IOU should have the authority to revise its approach to calculating the minimum margin of

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<sup>28</sup> Cal. Pub. Util. Code § 399.13(a)(4)(D).

procurement through its RPS procurement planning process and each IOU should have the flexibility to calculate this margin based on its unique portfolio make-up and procurement needs.

Accordingly, in order to comply with SB 2 (1x), the Commission should require each IOU to include a methodology for calculating its minimum margin of procurement within its RPS procurement plan. The Commission should then approve each IOU's methodology, assuming it is reasonable and justified, as the minimum margin of procurement for that IOU. Each IOU should have the ability to modify its methodology through the process already in place for updating its RPS procurement plan.

#### **VIII. ESTIMATING TRANSMISSION COSTS FOR THE PURPOSE OF RPS PROCUREMENT AND BID EVALUATION**

In future RFP solicitations or bilateral negotiations, SCE proposes to base transmission costs on the estimated cost of reimbursable network upgrades, meaning network upgrades funded by the IOUs' customers and attributable to individual projects. In accordance with D.12-11-016, SCE intends to require potential sellers to have an existing Interconnection Study (e.g., Facilities Study, Phase I or documentation demonstrating that the project has passed the Fast Track screens) or an equivalent or better study, or a signed Interconnection Agreement. For resources that do not have an existing interconnection to the electric system, transmission costs applicable to the project will be based on the applicable completed Interconnection Study (e.g., System Impact Study, Facilities Study, or a Phase I or Phase II Interconnection Study) or Interconnection Agreement, at a minimum. SCE also intends to reiterate its request to add a requirement that projects must have completed a Phase II Interconnection Study (or equivalent or better) prior to execution of the contract. These changes will provide more certainty around potential network

upgrade and interconnection costs, and a more accurate evaluation of such costs in the LCBF evaluation process.

For certain projects, SCE will need to rely on CAISO's annual transmission plan to determine interconnection upgrade costs for fully deliverable projects. This is because of the way that CAISO is reforming the Generator Interconnection Procedure ("GIP").<sup>29</sup> For Queue Cluster 5 and beyond, the CAISO, in conjunction with the Commission, will determine, in its annual transmission plan the amount of transmission needed to interconnect fully deliverable generation in order for the State to reach its RPS goals. For projects in these queue clusters, the generators will have the option to proceed down an interconnection path whereby the generator is not required to fund (on a reimbursable basis) the Deliverability Network Upgrades identified in the CAISO's annual transmission plan.<sup>30</sup> Under this option, Deliverability Network Upgrades identified in a project's Interconnection Study will still be funded by IOUs' customers, but that Interconnection Study will not quantify the Deliverability Network Upgrades costs. Instead, they will be quantified in the CAISO's annual transmission plan. Because these costs will represent additional costs to the IOUs' customers in contracting with a project, SCE will account for these network upgrade costs in its evaluation of projects that are part of Queue Cluster 5 and beyond. More specifically, SCE will use the network upgrade costs identified in the CAISO's annual transmission plan and attribute the appropriate amount of cost to that project, if applicable.<sup>31</sup>

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<sup>29</sup> The CAISO has adopted the reform and it is currently before FERC for approval.

<sup>30</sup> Generators can also choose to fund these upgrades directly. In such instances, the transmission adder for these costs will be zero because the IOUs' customers do not pay for these upgrades.

<sup>31</sup> To the extent these costs are avoidable (meaning that in the event the project is not built, the transmission upgrade will not occur and SCE's customers will not incur costs), SCE will not include them.



In order to be able to rely on these CAISO cost estimates, SCE should have the ability to align its RPS procurement schedule with the adoption of the CAISO's annual transmission plan. The transmission plan is typically adopted by the CAISO's board in March/April.

Finally, it is important to note that these costs are only applicable to those projects that intend to interconnect with Full Capacity Deliverability Status ("FCDS"). No additional information, outside of a project's Interconnection Study, is needed to determine a transmission adder for an Energy-Only project.

## **IX. CONSIDERATION OF PRICE ADJUSTMENT MECHANISMS**

Pursuant to Public Utilities Code Section 399.13(a)(5)(E), RPS procurement plans are required to include consideration of mechanisms for price adjustments associated with the costs of key components for eligible renewable energy resource projects with on-line dates more than 24 months after the date of contract execution. In the past, SCE has had mixed results using indexed pricing and price adjustment mechanisms. Some of the contracts that include these provisions have been based on changes in specific costs, such as the market price of wind turbines or diesel fuel costs for biomass transportation. Structuring the index and drafting the contract language to accurately reflect fluctuations in a project's costs has, in some cases, proven difficult. Accordingly, SCE will consider, but does not plan to require, a specific type of indexing structure in either its future bilateral contracts or in future solicitations.

## **X. SUMMARY OF COST QUANTIFICATION RESULTS**

SCE has attached as Appendix D – Standard Cost Quantification Table, a spreadsheet containing the actual expenditures per year for all Commission-approved RPS-eligible generation for every year from 2003 to 2011, and a forecast of future expenditures SCE may incur every year from 2012 through 2020. These expenditures are reported by technology for

each year. At the direction of the Energy Division, SCE has reported the expenditures for the forecast years, 2012 through 2020, in two categories: (1) contracts and generation that are approved by the Commission; and (2) contracts that are executed but not yet approved by the Commission. For all forecast years, SCE has assumed a 100% success rate for all projects that are not yet on-line. Finally, SCE reported the rate impacts in cents per kWh for each year for actual and forecast data.

## **XI. OTHER RPS PLANNING CONSIDERATIONS AND ISSUES**

As part of its overall procurement strategy, SCE is considering engaging in the sale of bundled renewable energy, unbundled RECs, or other renewable energy products to other retail sellers or third party purchasers. In D.12-11-016, the Commission authorized the IOUs to undertake competitive solicitations and bilateral contracts for the sale of excess RPS products.<sup>32</sup> Consistent with D.12-11-016, in an effort to optimize SCE's renewable portfolio and provide customers with the most value from the portfolio, SCE may: (1) hold a competitive solicitation seeking proposals from interested buyers to purchase a bundled product, unbundled RECs, or other renewable energy products from SCE; and (2) execute bilateral renewable energy transactions subject to the Commission's review and approval of completed transactions.

## **XII. IMPORTANT CHANGES FROM 2011 RPS PLAN**

SCE's 2012 RPS Plan differs substantially from SCE's 2011 RPS Plan in that SCE is not holding a solicitation for the 2012 solicitation cycle. Accordingly, SCE has not attached a Procurement Protocol or *pro forma* PPA or discussed important changes related thereto.<sup>33</sup>

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<sup>32</sup> D.12-11-016 at 60-62, 94 (Ordering Paragraph 17).

<sup>33</sup> SCE has also changed its 2012 Written Plan from its 2011 Written Plan in accordance with the requirements of the Ruling, including following the general format set forth in the Ruling.

# PUBLIC APPENDIX A

Redline of Final

Written Plan to

August 15, 2012 Plan



SOUTHERN CALIFORNIA  
**EDISON**

An *EDISON INTERNATIONAL* Company

(U 338-E)

~~First Amended~~Final 2012 Written Plan

~~August 15,~~November 29, 2012

**PUBLIC VERSION**

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~~First Amended~~Final 2012 Written Plan

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## **I. INTRODUCTION AND OVERVIEW OF 2012 RPS PLAN**

### **A. Introduction**

On April 5, 2012, the California Public Utilities Commission (“Commission” or “CPUC”) issued the Assigned Commissioner’s Ruling Identifying Issues and Schedule of Review for 2012 Renewables Portfolio Standard (“RPS”) Procurement Plans Pursuant to Public Utilities Code Sections 399.11 et seq. and Requesting Comments on New Proposals (the “Ruling”). That Ruling ~~requires~~required retail sellers to file a RPS procurement plan for 2012 (the “2012 RPS Plan”) according to the schedule set forth therein and details the specific topics to be covered in such 2012 RPS Plans. Additionally, the Ruling ~~includes~~included seven proposals for revising the procurement planning and review process and ~~solicits~~solicited feedback on these proposals.

Southern California Edison Company (“SCE”) filed the first version of its 2012 RPS Plan on May 23, 2012 and concurrently filed comments on the seven proposals. On July 18, 2012, SCE filed reply comments to various parties’ comments on that plan.

On August 2, 2012, the Commission issued the Administrative Law Judge’s Ruling (1) Adopting Renewable Net Short Calculation Methodology (2) Incorporating the Attached Methodology Into the Record, and (3) Extending the Date for Filing Updates to 2012 Procurement Plans (the “Renewable Net Short Ruling”). The Renewable Net Short Ruling ~~adopts~~adopted a renewable net short methodology and ~~directs~~directed retail sellers to update their renewable net short calculations in accordance with the adopted methodology by August 15, 2012. The Renewable Net Short Ruling also ~~extends~~extended the date for submitting other updates to the 2012 RPS Plans until August 15, 2012.

In accordance with the Renewable Net Short Ruling, SCE ~~is submitting this~~filed the first amended version of its 2012 RPS Plan ~~on August 15, 2012~~on August 15, 2012. In particular, SCE ~~has~~ included its

renewable net short calculations based on the Commission's adopted renewable net short methodology as [Appendix C.2 – Quantitative Information Based on the Commission's Renewable Net Short Methodology](#). SCE ~~has~~ also modified [Appendix C.1 – Quantitative Information Based on SCE's Renewable Net Short Methodology](#) – to include updated information.

At the same time, SCE ~~has~~ made several other changes to its 2012 RPS Plan ~~since its~~ [from the](#) May 23, 2012 filing. ~~In particular~~ [Specifically](#), SCE ~~has~~ determined that, given the State's focus on procurement from smaller-scale renewable facilities, SCE will not hold an RPS solicitation in this solicitation cycle. Instead, SCE will focus on meeting its need through its procurement programs for smaller renewable resources. These include various feed-in tariff ("FiT") and FiT-like programs which require multiple solicitations each year, and will result in more solicitations than SCE has ever administered in one year. Accordingly, SCE ~~has~~ revised its 2012 Written Plan and appendices hereto to reflect the following additional changes to the plan submitted on May 23, 2012:

- Added an explanation of SCE's rationale for not holding a general renewable solicitation, open to all renewable resources, in this solicitation cycle;
- Removed SCE's 2012 Procurement Protocol and Pro Forma Renewable Power Purchase and Sale Agreement ("PPA") and discussion related to each;
- Added a new [Appendix A – Redline of First Amended RPS Written Plan to May 23, 2012 Plan](#) – to reflect the changes since the ~~last~~ [May 23, 2012](#) plan was filed; and
- Replaced [Appendix B – Project Development Status Update](#) – to reflect the most recent version of that document.

[On November 8, 2012, the Commission adopted Decision \("D."\) 12-11-016, which conditionally accepted the 2012 RPS Plans filed by SCE and the other investor-owned utilities](#)



(“IOUs”).<sup>1</sup> The Commission accepted SCE’s request not to hold a 2012 RPS solicitation, but ordered SCE to remove the consideration of bilateral offers from its final 2012 RPS Plan.<sup>2</sup> The Commission also authorized the IOUs to undertake competitive solicitations and bilateral contracts for the sale of excess RPS products.<sup>3</sup> The IOUs were directed to file final 2012 RPS Plans within 15 days of the mailing date of D.12-11-016.<sup>4</sup>

Pursuant to D.12-11-016, SCE is hereby submitting this final 2012 RPS Plan. SCE has revised its 2012 Written Plan and appendices hereto to reflect the following changes to the plan submitted on August 15, 2012:

- Removed the consideration of bilateral offers;
- Provided that SCE may hold a solicitation for the sales of excess RPS products or enter into bilateral transactions for the sale of excess RPS products as authorized in D.12-11-016 and removed proposal that sales of excess RPS products from existing facilities be approved via the Tier 2 advice letter process;
- Added a new Appendix A – Redline of Final Written Plan to August 15, 2012 Plan – to reflect the changes since the August 15, 2012 plan was filed; and
- Made other minor updates to reflect the adoption of D.12-11-016 and the passage of time.

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<sup>1</sup> The Commission also accepted the 2012 RPS Plans submitted by the electric service providers and small and multi-jurisdictional utilities.

<sup>2</sup> D.12-11-016 at 2, 53-57, 86 (Conclusions of Law 19-20), 94 (Ordering Paragraph 15).

<sup>3</sup> Id. at 60-62, 94 (Ordering Paragraph 17). The Commission did not accept SCE’s proposal that sales of excess RPS products from existing facilities be approved via the Tier 2 advice letter process.

<sup>4</sup> Id. at 88 (Ordering Paragraph 2).

## **B. Overview of 2012 RPS Plan**

As SCE continues to make progress toward the State's RPS goals, and in planning for renewable procurement in 2012 and beyond, SCE has taken into account the regulatory framework established by the new 33% RPS statute. Senate Bill ("SB") 2 (1x) was enacted in the First Extraordinary Session of the Legislature on April 12, 2011, and became effective on December 10, 2011. SB 2 (1x) made significant changes to the RPS program, including departing from the prior structure of annual RPS goals and moving to multi-year compliance periods. The overall percentage of required procurement from renewable resources was also increased from 20% to 33%, with interim procurement targets established for each multi-year compliance period ("New Procurement Targets").<sup>15</sup>

SB 2 (1x) also established three portfolio content categories of renewable electricity products that may be used to satisfy the State's RPS goals.<sup>16</sup> The first portfolio content category ("Category 1") includes products from renewable generators with a first point of interconnection to the Western Electric Coordinating Council transmission system within the boundaries of a California Balancing Authority Area ("CBA"), or with a first point of interconnection with the electricity distribution system used to serve end users within the boundaries of a CBA, or where the renewable generation is dynamically transferred to a CBA, or scheduled into a CBA on an

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<sup>15</sup> See Cal. Pub. Util. Code § 399.15(b)(1)-(2); ~~Decision ("D.")~~ 11-12-020 at 23-25 (Ordering Paragraphs 1-4). In particular, as implemented by the Commission in D.11-12-020, the new RPS procurement quantity requirements applicable to all retail sellers are as follows: (1) 20% of overall retail sales for the first compliance period from 2011-2013; (2) 21.7% of 2014 retail sales plus 23.3% of 2015 retail sales plus 25% of 2016 retail sales for the second compliance period from 2014-2016; (3) 27% of 2017 retail sales plus 29% of 2018 retail sales plus 31% of 2019 retail sales plus 33% of 2020 retail sales for the third compliance period from 2017-2020; and (4) 33% of retail sales in each year thereafter.

<sup>16</sup> The Commission adopted D.11-12-052 implementing and further defining the portfolio content categories on December 21, 2011. Retail sellers are subject to a minimum portfolio content category target (varying by compliance period) for Category 1 products and a maximum portfolio content category target (varying by compliance period) for Category 3 products. The remainder may be satisfied by Category 2 products.

hourly basis without substituting electricity from another source. The second portfolio content category (“Category 2”) includes firmed and shaped products, and the third portfolio content category (“Category 3”) includes all other renewable products, including unbundled renewable energy credits (“RECs”).

Furthermore, SB 2 (1x) made several other changes to the RPS program’s structure. Among other things, SB 2 (1x) removed deficits associated with any previous RPS for retail sellers procuring at least 14% of retail sales from eligible renewable energy resources in 2010,<sup>37</sup> permits banking of excess procurement across compliance periods subject to certain conditions,<sup>48</sup> grants a waiver of compliance under certain circumstances,<sup>59</sup> determines that contracts signed prior to June 1, 2010 count in full toward RPS procurement requirements,<sup>610</sup> and directs the Commission to establish a cost limitation for each electrical corporation.<sup>711</sup> All of these provisions have not yet been implemented by the Commission. Accordingly, SCE’s procurement needs and planning may change as SB 2 (1x) is fully implemented by the Commission.

Through SCE’s analysis of its renewable net short position and procurement needs, as discussed herein, SCE has determined that it has a long-term renewable procurement need. Accordingly, in its **first amended** 2012 RPS Plan, SCE has indicated that it will continue to procure through its variety of programs for small-scale renewable resources, focused primarily on projects that are less than 20 MW. With such significant market responses to these programs and the substantial resources needed to facilitate them, SCE does not intend to launch a general solicitation

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Accordingly, SCE’s renewable procurement must consider both the New Procurement Targets and the portfolio content category targets under the new 33% RPS program.

<sup>37</sup> Cal. Pub. Util. Code § 399.15(a).

<sup>48</sup> *Id.* § 399.13(a)(4)(B).

<sup>59</sup> *Id.* § 399.15(b)(5).

<sup>610</sup> *Id.* § 399.16(d).

<sup>711</sup> *Id.* §§ 399.15(c)-(d).

open to all renewable resources in this cycle. Given SCE's renewable procurement needs and the State's emphasis on smaller-scale renewable generation, SCE has concluded that its resources would be better utilized focusing on the legislatively- and Commission-adopted renewable energy procurement programs for these resources that it administers throughout the year, as SCE expects to hold multiple solicitations per year to meet the goals of each program. These programs include: (1) the Renewable Auction Mechanism ("RAM") program; (2) SCE's Solar Photovoltaic Program ("SPVP"); and (3) the California Renewable Energy Small Tariff ("CREST") which will soon be expanded pursuant to Public Utilities Code Section 399.20 and re-named the Renewable Market Adjusting Tariff ("Re-MAT"). SCE will also be conducting other Requests for Offers ("RFOs") open to RPS-eligible resources including RFOs for qualifying facilities ("QFs") and All-Source RFOs. ~~Furthermore, SCE is always open to considering offers for bilateral contracts that provide unique value to customers throughout the year.~~

## **II. ASSESSMENT OF RPS PORTFOLIO SUPPLIES AND DEMAND**

### **A. Description of SCE's Portfolio and Forecast of Need**

SCE has made and continues to make progress towards the State's RPS goals. In 2011, SCE procured 21.1% of its retail sales from RPS-eligible resources. To date, SCE's RPS-eligible deliveries and executed renewable procurement contracts have resulted from SCE's various large RPS solicitation Requests for Proposals ("RFPs"), SCE's Renewables Standard Contract ("RSC") program, the utility-owned generation and independent power producer portions of SCE's SPVP, the Public Utilities Code Section 399.20 FiT program, the RAM program adopted by the Commission, QF contracts, utility-owned small hydro projects, and bilateral negotiations. ~~Additionally, SCE has issued its 2011 RPS solicitation and received a robust response of over~~

~~1,400 proposals. SCE is currently negotiating contracts with sellers resulting from that solicitation.~~

SCE's forecast of its renewable procurement position and need is included as Appendix C.1 – Quantitative Information Based on SCE's Renewable Net Short Methodology – and Appendix C.2 – Quantitative Information Based on the Commission's Renewable Net Short Methodology. Appendix C.2 includes all required assumptions for the Commission's renewable net short methodology. Appendix C.1 includes SCE's renewable net short methodology assumptions.<sup>812</sup>

Specifically, both forecasts are based on the New Procurement Targets for the 33% RPS program. Both forecasts also include all projects that have executed contracts in the calculations and assume a 100% success rate for projects that are currently on-line. In addition, in both forecasts, SCE has applied a 100% success rate to generic pre-approved generation (i.e., generation from the RAM program, the FiT program, and SCE's SPVP) before contracts are signed.<sup>913</sup> Both forecasts also incorporate current expected on-line dates for all projects that are not yet on-line.

Moreover, as discussed in more detail below, SCE's forecasts under Appendix C.1 and Appendix C.2 account for potential issues that could delay RPS compliance, project development status, the minimum margin of procurement, and other potential risks through the use of a success rate for delivered energy from contracts that are executed but not yet on-line. The success rate varies from 65% for the first compliance period, to 56% for the second compliance period, and 50% for the third compliance period and each period thereafter.

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<sup>8-12</sup> In its August 15, 2012 filing, SCE ~~has~~ updated Appendix C.1 from the version filed as Appendix C on May 23, 2012 to reflect the Commission's adoption of D.12-06-038 and other updated information and assumptions.

The only difference between SCE’s forecasts in Appendix C.1 and Appendix C.2 are that:

(1) SCE’s renewable net short methodology as reflected in Appendix C.1 uses SCE’s bundled retail sales forecast for all years while the Commission’s renewable net short methodology as reflected in Appendix C.2 uses SCE’s bundled retail sales forecast for 2012 through 2016 and 2022 through 2030 and the 2010 Long-term Procurement Plan (“LTPP”) standardized planning assumptions for 2017 through 2021;<sup>913</sup> and (2) SCE’s renewable net short methodology as reflected in Appendix C.1 assumes 100% re-contracting of existing contracts with projects 20 MW and less while the Commission’s renewable net short methodology as reflected in Appendix C.2 includes no re-contracting assumptions.

As shown in Appendix C.1, using SCE’s renewable net short methodology, SCE anticipates a procurement quantity requirement for the first compliance period of [REDACTED] kWh and RPS-eligible procurement of 49.6 billion kWh, for a net long position of about [REDACTED] [REDACTED] kWh. In the second compliance period, SCE forecasts a procurement quantity requirement of [REDACTED] kWh and RPS-eligible procurement of 62.8 billion kWh, for a net long position of about [REDACTED] kWh. In the third compliance period, SCE forecasts a procurement quantity requirement of 99 billion kWh and RPS-eligible procurement of 84.3 billion kWh, for a net short position of about 14.7 billion kWh without the use of banking. With the use of banking, that net short position may be reduced to 0.4 billion kWh. SCE also forecasts a net short position for 2021 and 2022.

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<sup>913</sup> After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

<sup>914</sup> The Commission’s renewable net short methodology states that utilities can use their own forecasts for bundled retail sales for the first five years and should use the LTPP standardized planning assumptions thereafter. In Appendix C.2, SCE has used its own bundled retail sales forecast for 2022 through 2030 because there is no LTPP forecast for those years.

Using the Commission's renewable net short methodology as set forth in Appendix C.2, SCE forecasts a net long position of approximately [REDACTED] kWh for the first compliance period and a net long position of approximately [REDACTED] kWh for the second compliance period. In the third compliance period, SCE forecasts a net short position of approximately 11.7 billion kWh without the use of banking. SCE may be able to fill that net short position through the use of banking. SCE also forecasts a net short position for 2021 and the years thereafter under the Commission's methodology.

Accordingly, under either methodology, SCE does not have a short-term renewable procurement need, but it does anticipate a longer term need for additional RPS-eligible resources.

Even given SCE's short-term procurement position, SCE has concerns about the barriers to achieving the State's RPS goals in the long-term. Based on SCE's experience in RPS solicitations to date, transmission availability will continue to be an impediment to bringing new renewable resources on-line.<sup>H15</sup> Increased procurement activity (i.e., execution of more contracts) will not accelerate the planning, permitting, and construction processes for new transmission and transmission upgrades. While SCE will continue to seek and contract for renewable resources in the long-term, SCE expects most project proposals to be limited by the scarcity of transmission. Additionally, the long and complicated process for siting and permitting of renewable generation projects, the continued uncertainty surrounding the federal production and investment tax credits, a heavily subscribed interconnection queue, developer performance issues, curtailment, and lack of flexibility in established regulatory processes related to procurement are all major challenges to meeting California's renewable energy goals. These procurement goals will not be achieved

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<sup>H15</sup> The Commission has repeatedly recognized this in its Quarterly Reports to the Legislature. *See, e.g.*, Renewables Portfolio Standard Quarterly Report at 10 (Q3 2010); Renewables Portfolio Standard Quarterly

without addressing these significant challenges. SCE addresses the impediments to reaching the State's RPS goals and the steps SCE is taking to mitigate these impediments in more detail in Section III below.

**B. SCE's Plan for Achieving RPS Procurement Goals**

In its 2012 RPS procurement activities through the procurement programs discussed above, SCE intends to contract for renewable energy necessary to achieve the State's RPS goals, taking into account the renewable energy procured through SCE's prior RPS solicitations and other procurement mechanisms, success rate assumptions for executed contracts that are not yet on-line, as well as future RPS solicitations that are expected to take place. Generally, SCE's planned procurement activities for 2012 will include procurement from the procurement programs discussed above, including the RAM program, the FiT program, SCE's SPVP, QF standard contracts, and any new processes approved by the Commission, ~~and bilateral negotiations with competitive renewable energy projects~~. Furthermore, as discussed in Section XI below, SCE may also sell bundled renewable energy, RECs, or other renewable energy products to maximize value to its customers and optimize its portfolio.

All of the procurement in SCE's renewable portfolio to-date is from contracts executed prior to June 1, 2010 or Category 1 products. SCE prefers Category 1 products because they provide the most flexibility and certainty for SCE's customers. SCE forecasts that it will meet its RPS procurement quantity needs primarily through Category 1 products, either through a future solicitation, future bilateral transactions, or FiT or other procurement programs. SCE may procure

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Report at 8 (Q2 2010); Renewables Portfolio Standard Quarterly Report at 8 (Q1 2010); Renewables Portfolio Standard Quarterly Report at 7 (Q4 2009).



Category 2 or 3 products as needed to meet compliance period needs, while staying within the limits set by SB 2 (1x) as implemented by the Commission.

In SCE's prior experience meeting the 20% renewable energy goal, it is prudent to contract with projects early on in the process to support the development of needed transmission. SCE considers its long-term net short position in light of how long it takes to bring new projects on-line, how far in the future the short position exists, and how many solicitations SCE anticipates being able to complete in order to meet the short position (including solicitations and other procurement opportunities from the procurement programs discussed above). SCE then makes a pro-rata allocation of SCE's need over the remaining anticipated solicitations. For example, if SCE is short 300 GWh/year over the measured time period, and SCE anticipates being able to conduct three solicitations, it would solicit 100 GWh/year in each of the three solicitations.

SCE determines its need for resources with specific deliverability characteristics (such as peaking, dispatchable, baseload, firm, and as-available) through its least-cost best-fit ("LCBF") approach. SCE uses its LCBF methodology to compare project profiles, including duration, location, technology, on-line date, viability, deliverability and price, to estimate the value of each project to SCE's customers and its relative value in comparison to other proposals. This process ensures that each project selected most cost-effectively aligns with SCE's procurement needs.

### **III. POTENTIAL COMPLIANCE DELAYS**

Six primary factors will challenge achievement of the RPS goals established under SB 2 (1x): (1) permitting, siting, approval, and construction of transmission and renewable generation projects; (2) the uncertainty surrounding the federal production and investment tax credits; (3) a heavily subscribed interconnection queue; (4) developer inexperience and performance issues; (5) curtailment; and (6) regulatory inflexibility. SCE discusses each of these potential issues that

could cause compliance delays, in turn, below and describes the steps it has taken to mitigate the impacts of these challenges.

**A. Permitting, Siting, Approval, and Construction of Transmission and Renewable Generation Projects**

The lack of sufficient transmission infrastructure and the prolonged process for permitting and approval of new transmission lines continues to be the most significant impediment to reaching California's RPS goals. SCE has received relatively few proposals from renewable generators that do not require significant transmission upgrades or new transmission development for the renewable energy to be deliverable. Based on the market responses in SCE's RPS solicitations and other renewable programs, lack of adequate transmission infrastructure and the lengthy process of siting, permitting, and building new transmission continues to be a real and complicated impediment to bringing new renewable resources on-line.

The challenges surrounding transmission are only compounded as the State's RPS goal increases from 20% to 33%, which represents a 65% increase in procurement of renewable energy without taking into account load growth.<sup>1216</sup> The Commission has stated that “[s]erving 33% of California's energy needs with renewable sources will require an infrastructure build-out on a scale and timeline perhaps unparalleled anywhere in the world.”<sup>1217</sup> Indeed, the Commission noted that the “magnitude of the infrastructure that California will have to plan, permit, procure, develop, and integrate in the next ten years is immense and unprecedented,” including approximately \$115 billion in new infrastructure investment in an uncertain financial

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<sup>1216</sup> If load growth is taken into account, this percentage is even higher.

<sup>1217</sup> Renewables Portfolio Standard Quarterly Report at 3 (October 2008).

environment, including seven major new transmission lines (in addition to the four major new transmission lines needed to reach 20% renewables).<sup>1418</sup>

Over the past few years, SCE has taken several actions to address the impediment of transmission to achieving California's renewable energy goals. For example, SCE has attempted to expedite the permitting and construction of renewable transmission facilities by: (1) proactively providing the upfront financing for needed transmission network upgrades, (2) seeking authorization to record costs associated with interconnection and environmental studies for renewable projects, (3) providing leadership to the California Independent System Operator's ("CAISO") reform of the Large Generator Interconnection Procedures, (4) requesting authority to study the feasibility of developing transmission capacity to deliver output from potential renewable resources. Despite these efforts, SCE expects that transmission will continue to be an impediment to achieving the State's RPS goals.

The long and complicated permitting process for renewable generation facilities is also a barrier to meeting the State's RPS goals. The Commission has observed that most RPS project delays "are due to lack of transmission or generation permitting at the county, state, or federal level."<sup>1519</sup> Moreover, the Commission also noted that environmental concerns, legal challenges, and public opposition can impact the timeline for bringing renewable generation and transmission projects on-line.<sup>1620</sup>

## **B. Uncertainty Surrounding the Federal Production and Investment Tax Credits**

Another factor that could jeopardize the ability of SCE and other retail sellers to reach the State's RPS goals is the uncertainty surrounding the federal production and investment tax credits.

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<sup>1418</sup> 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 1-4 (June 2009).  
<sup>1519</sup> Renewables Portfolio Standard Quarterly Report at 7 (Q4 2009).

Renewable procurement contracts often have no-fault termination rights if the tax credits are not extended. Sending signals to the renewables market that these credits will be available over the long-term will stimulate sustained investment in renewable resources rather than the “boom and bust” cycle induced by the uncertainty regarding whether the federal tax credits will be available.

The American Recovery and Reinvestment Act of 2009 (“ARRA 2009”) extended the production tax credit for wind until the end of 2012, and for other technologies until the end of 2013.<sup>1620</sup> The investment tax credit for solar was also extended until the end of 2016. In Section 1603 of the ARRA 2009, the U.S. Treasury Department launched a new program whereby eligible energy property can receive a cash grant (the “Cash Grant”) in lieu of the investment tax credit. The Cash Grant has been well received by renewable generation developers. To qualify for the Cash Grant, the construction of the eligible property had to begin by December 31, 2010, and the property must be placed “in service” based on a schedule dependent on the type of generation (by January 1, 2013 for large wind and January 1, 2017 for solar).<sup>1822</sup> These aggressive construction and in-service requirements have led the generation community to place increasing political pressure on regulatory bodies such as the Commission, the California Energy Commission (“CEC”), the Bureau of Land Management, along with SCE, to expedite the regulatory process to enable generators to come on-line sooner in order to take advantage of this stimulus program.

The expiration dates set forth in the ARRA have not been extended beyond these dates and the “on again, off again” nature of these tax credits continues to be a barrier to renewable development. In particular, the expiration of the production tax credit for wind at the end of 2012

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<sup>1620</sup> 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 4 (June 2009).

<sup>1721</sup> See American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5 (2009).

<sup>1822</sup> See Payments for Specified Energy Property in Lieu of Tax Credits under the American Recovery and Reinvestment Act of 2009, U.S. Treasury Department Guidance Document (July 2009) (available at <http://www.treasury.gov/recovery/docs/guidance.pdf>).

currently impacts any newly proposed wind generating facilities given the time needed for Commission approval of contracts, siting, permitting, construction, and development of needed transmission. Additionally, the uncertain future of the federal production and investment tax credits will likely continue to be a long-term barrier to meeting the RPS goals.

Although the uncertainty associated with production tax credits and investment tax credits was outside the control of California state agencies, SCE's policy advisors in Washington, D.C. worked with senators and legislators advocating for the extension of these tax credits. SCE also supported California Assembly Joint Resolution 50 that urged the U.S. Senate and President to extend the credits. As explained above, the ARRA 2009 extended the production tax credit for wind until the end of 2012, and for other technologies until the end of 2013. The investment tax credit for solar was also extended until the end of 2016.

**C. A Heavily Subscribed Interconnection Queue**

A heavily subscribed CAISO interconnection queue is also a major barrier to achieving the State's RPS goals. In its recent requested tariff amendment, CAISO estimated that it would take "as long as six to eight years from October 1, 2010 to complete the studies for all small generators currently in the ISO's queue under the ISO's current SGIP [Small Generator Interconnection Process] process."<sup>1923</sup> As of May 8, 2012, SCE had over 850 interconnection requests, comprising more than 27,000 MW, inclusive of CAISO and Wholesale Distribution Access Tariff ("WDAT") requests. Although the CAISO's interconnection reform effort is currently being implemented, whether or not the reforms will meet the expectations and goals of all stakeholders remains to be seen.

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<sup>1923</sup> Tariff Amendment to Revise Generator Interconnection Procedures at 5 (October 19, 2010) (available at <http://www.caiso.com/2834/2834c11a4c2f0.html>).

To address the interconnection queue impediment, SCE played a leadership role among California Participating Transmission Owners in the stakeholder process that led to reforms of the CAISO Large Generator Interconnection Procedures, which were approved by the Federal Energy Regulatory Commission (“FERC”) in 2008 and are currently being implemented. In addition, SCE is heavily involved in the Rule 21 settlement process, which will reform the interconnection process for renewable generators interconnecting under Rule 21. SCE has also been supportive of generator interconnection reform at the CAISO, including the integration of transmission and generator interconnection planning (“TPP/GIP”).

**D. Developer Inexperience and Performance Issues**

Achieving California’s renewable energy goals is also dependent on the strong performance by renewable developers. SCE has executed contracts with a large number of developers. To qualify for the RPS program, these developers must plan for, permit, construct, and operate their facilities according to milestones set forth in the contracts. Hurdles encountered during these activities require developers to alter their milestone schedules, and new developers do not necessarily know how to navigate the interconnection and permitting processes. For example, SCE has recently had to terminate several contracts due to performance issues on the part of inexperienced developers. To the extent that delays and termination events occur, the amount of delivered energy on which SCE can rely to reach the State’s goals may be affected.

To proactively address development performance issues, SCE continues to reach out and communicate with project developers on a regular basis, discuss options and the status of project development, and provide guidance and direction as appropriate. SCE has also made several modifications to its solicitation materials in response to lessons learned from developers in previous solicitations. To overcome some of the development barriers, SCE has created an option

to have SCE act as Scheduling Coordinator, allowed for delivery points at the point of interconnection with the transmission provider's electric grid, and tailored certain terms and conditions to address market changes in equipment availability and supply. SCE also intends to add a requirement for future solicitations that projects have at least a completed Interconnection Study (as demonstrated by a completed System Impact Study, Facilities Study, Phase I or Phase II Interconnection Study, documentation showing that the project has passed Fast Track screens, or a signed Interconnection Agreement) in order to ~~be shortlisted and a bid into the solicitation, as approved in D.12-11-016, and to propose that projects have at least a completed~~ Phase II Interconnection Study (or equivalent or better) prior to execution of the contract. By ensuring that shortlisted projects have completed interconnection studies, the risk of project failure due to interconnection issues could be mitigated.

SCE has also worked with developers to overcome local opposition to renewable projects through active education with city governments regarding the State's goals and the importance of renewable energy in California. Furthermore, SCE continually educates the renewable development community on its procurement opportunities. In order to explain SCE's various renewable contracting opportunities, SCE speaks to developers at industry-wide symposiums (e.g., American Wind Energy Association, the U.S. military's Enhanced-Use-Lease, Geothermal Resources Council, Solar One), hosts bidders' conferences in connection with each RPS solicitation and other programs, fields countless individual inquiries, hosts outreach sessions for diverse business enterprises, and participates in developer forums.

To maximize contracting opportunities, SCE voluntarily implemented its RSC program, and in 2009 and 2010, executed 35 contracts resulting from that program for approximately 459

MW of renewable energy.<sup>2024</sup> This program has since been replaced by the Commission's implementation of the RAM program. SCE also implemented a competitive solicitation offering long-term power contracts to independent solar photovoltaic ("PV") power providers as part of SCE's SPVP.

#### **E. Curtailement**

Congestion at the transmission and generation levels is increasing and curtailment events are becoming more and more common. Under the Generator Interconnection Agreements between CAISO, the transmission provider and a project developer, projects are able to come on-line as an energy-only ("EO") resource until associated deliverability interconnection upgrades are complete. Until the upgrades are complete, this large number of EO projects may result in the CAISO curtailing these projects at any time and to any degree for reliability purposes.

Several of SCE's contracted wind projects in the Tehachapi region in Kern County, California, for example, have been forced to curtail deliveries significantly in order to accommodate transmission construction and maintenance and system reliability in this area. SCE expects that this same issue will occur in the Devers Colorado River area during the construction phases of that transmission project. Due to the significantly larger scale of the Devers Colorado River line, the potential curtailment risk could be much greater in scope.

Frequent curtailment events such as these may impact SCE's ability to meet its RPS compliance goals due to lessened renewable energy deliveries. Additionally, the curtailments could impact the ability of owners of operating renewable projects to maintain adequate revenue to service their debt, and may create a chilling effect on future financing of projects under development until the transmission upgrades are complete.

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<sup>2024</sup> Four of those contracts for about 65 MW were subsequently terminated.



SCE has kept these project owners informed of the latest transmission outage schedules, and has worked to mitigate the financial impacts of these curtailments on these projects. The mitigation efforts include discussion with the CAISO to evaluate curtailment need on the basis of all projects in a transmission area, instead of on a project-by-project basis, and proposing more effective allocation methods that take into account each resource's actual, current generating potential. When the CAISO establishes an operating level that may require curtailment, it calculates the allowable capacity on the transmission line during a set period of time. That capacity is then often distributed on a pro-rata basis to each project to operate up to the appropriate percentage of its contract capacity. Because not all resources peak at the same time, imposing fixed maximum generation levels results in significant over-curtailment. Since all of the generators on the Tehachapi Renewable Transmission Project system are new and have modern control systems, it is quite practical to automate this process and send each project a real-time signal representing its individual cap. In this scenario, as long as the unrestricted output from all of the projects is less than the system limit, the projects may operate at 100% of the intermittent resource output.

SCE resolved a similar problem with the legacy QF generators in the Tehachapi area by combining them all into one group and curtailing them as a group. In this case, the generators were connected to the distribution system, so the curtailments were administered by SCE, not the CAISO. SCE worked with the generators to develop an arrangement under which some generators with modern control systems curtail on behalf of all generators in the group. This allows the other generators to continue to generate at full output while generators with modern control systems curtail only when coincident generation on the system exceeds the limit. Even for curtailing generators, the amount of curtailment under this arrangement is less than it would have been

without the arrangement. This collaborative solution has helped SCE ensure safety and reliability while reducing expected curtailments by approximately 90%.

#### **F. Regulatory Inflexibility**

The ~~investor-owned utilities~~ (“IOUs”) need the ability to make changes to their commercial documents to reflect changes in the renewable energy market. The credit and financing markets can undergo significant changes in the time between the filing and approval of the RPS procurement plans that necessitate changes to the IOUs’ solicitation materials. Changes can also be required because of new regulatory developments. It does not benefit any party to require the IOUs to issue solicitations with stale commercial documents that require substantial modifications before they can be executed. To the contrary, such inflexibility tends to increase transaction costs and commercial disputes and results in expensive litigation. SCE suggests that the Commission consider ways to streamline the approval process so that IOUs can react more quickly to market and regulatory changes and reflect those changes in their solicitation materials.

#### **IV. PROJECT DEVELOPMENT STATUS UPDATE**

SCE has attached as Appendix B – Project Development Status Update, a written status update on the development of all RPS-eligible projects currently under contract but not yet delivering generation. Some of the information in this status update has been reported to SCE by its counterparties. The status of these projects impacts SCE’s renewable portfolio position and procurement decisions by allowing SCE to adjust its procurement once it is determined that projects will or will not meet their contractual obligations.

## V. RISK ASSESSMENT

SCE describes the risk of projects failing to build or having construction delays in Section III above.

## VI. QUANTITATIVE INFORMATION

Appendix C.1 - Quantitative Information Based on SCE's Renewable Net Short Methodology – provides a quantitative analysis of SCE's renewable procurement need, based on the following assumptions:

- SCE's bundled retail sales forecast;
- 100% success rate for any project already on-line until the expiration date of the associated contract;
- A success rate ranging from 65% to 50% over the various compliance periods for delivered energy with respect to projects with executed contracts that are not yet on-line;
- 100% success rate for projects originating from the mandated programs referred to as "Program Generics" in Appendix C.1, such as SCE's SPVP, the FiT program, and the RAM program before contracts from such programs are signed;<sup>24</sup><sup>25</sup> and
- 100% success in re-contracting with projects 20 MW or less.

Appendix C.2 - Quantitative Information Based on the Commission's Renewable Net Short Methodology – provides a quantitative analysis of SCE's renewable procurement need based on the Commission's adopted renewable net short methodology assumptions, including, among other assumptions:

- SCE’s bundled retail sales forecast for 2012 through 2016 and 2022 through 2030 and the 2010 LTPP standardized planning assumptions for 2017 through 2021;<sup>2226</sup>
- 100% success rate for any project already on-line until the expiration date of the associated contract;
- A success rate ranging from 65% to 50% over the various compliance periods for delivered energy with respect to projects with executed contracts that are not yet on-line;
- 100% success rate for projects originating from generic pre-approved generation such as SCE’s SPVP, the FiT program, and the RAM program before contracts from such programs are signed;<sup>2327</sup> and
- No re-contracting assumptions.

Appendix C.1 and Appendix C.2 detail SCE’s assessment of its multi-year portfolio supplies in place to meet the goals established in SB 2 (1x) using both its own renewable net short methodology and the Commission’s renewable net short methodology and establish SCE’s net long and short positions during the first three compliance periods.

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<sup>2125</sup> After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

<sup>2226</sup> The Commission’s renewable net short methodology states that utilities can use their own forecasts for bundled retail sales for the first five years and should use the LTPP standardized planning assumptions thereafter. In Appendix C.2, SCE has used its own bundled retail sales forecast for 2022 through 2030 because there is no LTPP forecast for those years.

<sup>2327</sup> After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

## VII. MINIMUM MARGIN OF PROCUREMENT

SCE's future renewable procurement efforts will be guided by its forecast of its renewable procurement needs, as described in Section II and Section VI and Appendix C.1 and Appendix C.2.

SCE currently accounts for the risk of project failure associated with projects that are not yet on-line by assuming a success rate delivered energy from such contracts. The success rate varies from 65% for the first compliance period, to 56% for the second compliance period, and 50% for the third compliance period and each period thereafter. This success rate is modeled to represent project development success rates as well as any contingency that would make meeting the State's RPS goals less likely (e.g., delays due to transmission, curtailment, material shortages, load growth beyond that which is forecasted, or less than expected output from resources). SCE uses this assumption to calculate its net short/net long position. At this time, it also provides an appropriate minimum margin of procurement "necessary to comply with the renewables portfolio standard to mitigate the risk that renewable projects planned or under contract are delayed or cancelled."<sup>2428</sup> Moreover, SCE procures based on a forecast using the success rate so SCE's procurement takes into account these risks. SCE has used other success rates in the past and expects that this success rate may need to be modified in the future, to reflect changes to SCE's portfolio.

The Commission should avoid mandating a method for IOUs to calculate the minimum margin of procurement and should not attempt to impose a one-size-fits-all approach. As many of the projects in SCE's portfolio become operational, SCE will face different risks. The risks associated with project failure will be replaced by less significant risks of projects generating

below full capacity. Similarly, SCE expects that the portfolio risk picture is not the same for each IOU. For example, risks may vary depending on whether a portfolio contains a high proportion of contracts that are online (as discussed above) or depending on the various technologies being used (e.g., geothermal technology, which provides a fairly firm resource versus wind or solar technologies, which are more intermittent). For these reasons, each IOU should have the authority to revise its approach to calculating the minimum margin of procurement through its RPS procurement planning process and each IOU should have the flexibility to calculate this margin based on its unique portfolio make-up and procurement needs.

Accordingly, in order to comply with SB 2 (1x), the Commission should require each IOU to include a methodology for calculating its minimum margin of procurement within its RPS procurement plan. The Commission should then approve each IOU's methodology, assuming it is reasonable and justified, as the minimum margin of procurement for that IOU. Each IOU should have the ability to modify its methodology through the process already in place for updating its RPS procurement plan.

## **VIII. ESTIMATING TRANSMISSION COSTS FOR THE PURPOSE OF RPS PROCUREMENT AND BID EVALUATION**

In future RFP solicitations or bilateral negotiations, SCE proposes to base transmission costs on the estimated cost of reimbursable network upgrades, meaning network upgrades funded by the IOUs' customers and attributable to individual projects. [In accordance with D.12-11-016](#), SCE intends to require potential sellers to have an existing Interconnection Study (e.g., Facilities Study, Phase I or documentation demonstrating that the project has passed the Fast Track screens) or an equivalent or better study, or a signed Interconnection Agreement. For resources that do not

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<sup>2428</sup> Cal. Pub. Util. Code § 399.13(a)(4)(D).

have an existing interconnection to the electric system, transmission costs applicable to the project will be based on the applicable completed Interconnection Study (e.g., System Impact Study, Facilities Study, or a Phase I or Phase II Interconnection Study) or Interconnection Agreement, at a minimum. SCE also intends to [reiterate its request to](#) add a requirement that projects must have completed a Phase II Interconnection Study (or equivalent or better) prior to execution of the contract. These changes will provide more certainty around potential network upgrade and interconnection costs, and a more accurate evaluation of such costs in the LCBF evaluation process.

For certain projects, SCE will need to rely on CAISO’s annual transmission plan to determine interconnection upgrade costs for fully deliverable projects. This is because of the way that CAISO is reforming the Generator Interconnection Procedure (“GIP”).<sup>2529</sup> For Queue Cluster 5 and beyond, the CAISO, in conjunction with the Commission, will determine, in its annual transmission plan the amount of transmission needed to interconnect fully deliverable generation in order for the State to reach its RPS goals. For projects in these queue clusters, the generators will have the option to proceed down an interconnection path whereby the generator is not required to fund (on a reimbursable basis) the Deliverability Network Upgrades identified in the CAISO’s annual transmission plan.<sup>2630</sup> Under this option, Deliverability Network Upgrades identified in a project’s Interconnection Study will still be funded by IOUs’ customers, but that Interconnection Study will not quantify the Deliverability Network Upgrades costs. Instead, they will be quantified in the CAISO’s annual transmission plan. Because these costs will represent additional costs to the IOUs’ customers in contracting with a project, SCE will account for these network

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<sup>2529</sup> The CAISO has adopted the reform and it is currently before FERC for approval.

<sup>2630</sup> Generators can also choose to fund these upgrades directly. In such instances, the transmission adder for these costs will be zero because the IOUs’ customers do not pay for these upgrades.

upgrade costs in its evaluation of projects that are part of Queue Cluster 5 and beyond. More specifically, SCE will use the network upgrade costs identified in the CAISO's annual transmission plan and attribute the appropriate amount of cost to that project, if applicable.<sup>2731</sup>

In order to be able to rely on these CAISO cost estimates, SCE should have the ability to align its RPS procurement schedule with the adoption of the CAISO's annual transmission plan. The transmission plan is typically adopted by the CAISO's board in March/April.

Finally, it is important to note that these costs are only applicable to those projects that intend to interconnect with Full Capacity Deliverability Status ("FCDS"). No additional information, outside of a project's Interconnection Study, is needed to determine a transmission adder for an Energy-Only project.

## **IX. CONSIDERATION OF PRICE ADJUSTMENT MECHANISMS**

Pursuant to Public Utilities Code Section 399.13(a)(5)(E), RPS procurement plans are required to include consideration of mechanisms for price adjustments associated with the costs of key components for eligible renewable energy resource projects with on-line dates more than 24 months after the date of contract execution. In the past, SCE has had mixed results using indexed pricing and price adjustment mechanisms. Some of the contracts that include these provisions have been based on changes in specific costs, such as the market price of wind turbines or diesel fuel costs for biomass transportation. Structuring the index and drafting the contract language to accurately reflect fluctuations in a project's costs has, in some cases, proven difficult. Accordingly, SCE will consider, but does not plan to require, a specific type of indexing structure in either its future bilateral contracts or in future solicitations.

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<sup>2731</sup> To the extent these costs are avoidable (meaning that in the event the project is not built, the transmission upgrade will not occur and SCE's customers will not incur costs), SCE will not include them.



## **X. SUMMARY OF COST QUANTIFICATION RESULTS**

SCE has attached as Appendix D – Standard Cost Quantification Table, a spreadsheet containing the actual expenditures per year for all Commission-approved RPS-eligible generation for every year from 2003 to 2011, and a forecast of future expenditures SCE may incur every year from 2012 through 2020. These expenditures are reported by technology for each year. At the direction of the Energy Division, SCE has reported the expenditures for the forecast years, 2012 through 2020, in two categories: (1) contracts and generation that are approved by the Commission; and (2) contracts that are executed but not yet approved by the Commission. For all forecast years, SCE has assumed a 100% success rate for all projects that are not yet on-line. Finally, SCE reported the rate impacts in cents per kWh for each year for actual and forecast data.

## **XI. OTHER RPS PLANNING CONSIDERATIONS AND ISSUES**

As part of its overall procurement strategy, SCE is considering engaging in the sale of bundled renewable energy, unbundled RECs, or other renewable energy products to other retail sellers or third party purchasers. In [D.12-11-016, the Commission authorized the IOUs to undertake competitive solicitations and bilateral contracts for the sale of excess RPS products.](#)<sup>32</sup> [Consistent with D.12-11-016, in](#) an effort to optimize SCE's renewable portfolio and provide customers with the most value from the portfolio, SCE ~~seeks the authority to~~may: (1) ~~potentially~~ hold a competitive solicitation seeking proposals from interested buyers to purchase a bundled product, unbundled RECs, or other renewable energy products from SCE; and (2) execute bilateral renewable energy transactions subject to the Commission's review and approval of completed transactions; ~~and (3) submit such completed sales contracts for approval through the filing of a~~

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<sup>32</sup> [D.12-11-016 at 60-62, 94 \(Ordering Paragraph 17\).](#)

~~Tier 2 advice letter under circumstances when the resale transaction is for energy from an existing facility.~~

~~With respect to the authority to submit sales contracts through Tier 2 advice letters, the Commission should permit the IOUs to obtain approval for the resale of renewable energy from existing facilities through a Tier 2 advice letter because there are very few issues for the Commission to consider in connection with such transactions. The current Tier 3 advice letter process was established to review the purchase of renewable energy by the IOUs from, for the most part, generating facilities that have not yet been constructed. This review process necessitates not only a showing that the price is reasonable under the agreement, but also a demonstration that the project is viable. As evidenced by the Energy Division's advice letter template, the viability review requires a large amount of information regarding interconnection, technology, financial wherewithal of the seller, and many other details.~~

~~Given that these concerns are not part of a resale of renewable energy from existing facilities, SCE proposes to streamline the approval process for these transactions. Under such transactions, the principal issues are whether the IOU has obtained a reasonable price and has excess renewable energy to sell. Given that these two issues should be relatively straightforward, it is appropriate to allow for a quicker approval process for these transactions.<sup>28</sup> Furthermore, allowing Tier 2 advice letter approval of renewable energy sales from existing facilities will allow the IOUs to maximize the value of these sales for their customers. Currently, the Commission approval date for a sales transaction is not known or knowable at the time a transaction is executed and can occur several months after the date that the contract was signed. As such, IOUs are~~

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<sup>28</sup> ~~If more complicated issues arise in connection with a specific sales transaction, the Energy Division would still have the ability to suspend the Tier 2 advice letter and determine that approval through a Commission resolution is required.~~

~~required to structure resale transactions so that deliveries begin after Commission approval is obtained or the buyer will have to risk taking delivery of a less valuable compliance product.<sup>29</sup> While IOUs can include language in resale contracts to allocate risks accordingly, the additional risk will create additional transaction costs and reduce the value of the product being sold. Finally, this delay in the approval process makes it very difficult for IOUs to use resale transactions to make up for procurement shortfalls existing at the end of a compliance period.~~

## **XII. IMPORTANT CHANGES FROM 2011 RPS PLAN**

SCE's 2012 RPS Plan differs substantially from SCE's 2011 RPS Plan in that SCE is not holding a solicitation for the 2012 solicitation cycle. Accordingly, SCE has not attached a Procurement Protocol or *pro forma* PPA or discussed important changes related thereto.<sup>3033</sup>

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<sup>29</sup> ~~One of the conditions set forth in D.11-12-052 for a resold Category 1 product to continue to count as a Category 1 resource is that “[t]he resale contract transfers only electricity and RECs that have not yet been generated prior to the effective date of the resale contract,” meaning that electricity and RECs that have been generated prior to the effective date of the resale contract would no longer count as Category 1. D.11-12-052 at 36. The decision adds that, for IOUs, the “effective date” is “the date that Commission approval of the resale contract is final.” *Id.* at 36, note 69.~~

<sup>3033</sup> SCE has also changed its 2012 Written Plan from its 2011 Written Plan in accordance with the requirements of the Ruling, including following the general format set forth in the Ruling.

Document comparison by Workshare Compare on Tuesday, November 27, 2012  
5:20:57 PM

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Description	Original
Document 2 ID	file://C:\Documents and Settings\karlstc\Desktop\New.docx
Description	New
Rendering set	Standard

Legend:	
<u>Insertion</u>	
<del>Deletion</del>	
Moved from	
<u>Moved to</u>	
Style change	
Format change	
<del>Moved deletion</del>	
Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

Statistics:	
	Count
Insertions	128
Deletions	120
Moved from	2
Moved to	2
Style change	0
Format changed	0
Total changes	252

# APPENDIX B

Project Development

Status Update

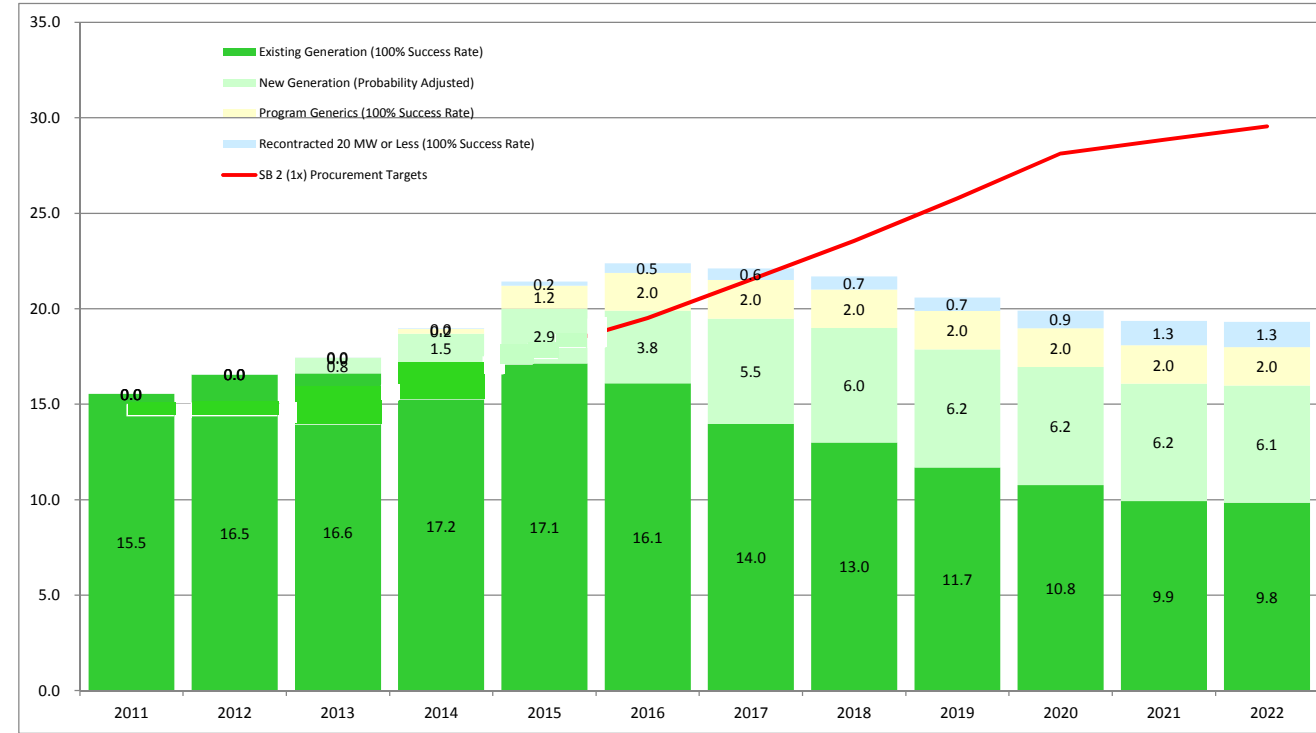
[Confidential]

# PUBLIC APPENDIX

## C.1

### Quantitative Information Based on SCE's Renewable Net Short Methodology

Billion kWh	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bundled Retail Sales	73.8					78.0	79.7	81.2	83.2	85.2	87.4	89.6
SB 2 (1x) Procurement Targets	14.8					19.5	21.5	23.6	25.8	28.1	28.8	29.6
Existing Generation (100% Success Rate)	15.5	16.5	16.6	17.2	17.1	16.1	14.0	13.0	11.7	10.8	9.9	9.8
New Generation (Probability Adjusted)	0.0	0.0	0.8	1.5	2.9	3.8	5.5	6.0	6.2	6.2	6.2	6.1
Program Generics (100% Success Rate)	0.0	0.0	0.0	0.2	1.2	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Recontracted 20 MW or Less (100% Success Rate)	0.0	0.0	0.0	0.0	0.2	0.5	0.6	0.7	0.7	0.9	1.3	1.3
Total	15.5	16.6	17.5	19.0	21.4	22.4	22.1	21.7	20.6	19.9	19.4	19.3



Billion kWh	Compliance Period 1	Compliance Period 2	Compliance Period 3	2021	2022
Bundled Retail Sales			329.4	87.4	89.6
SB 2 (1x) Procurement Targets			99.0	28.8	29.6
Existing Generation (100% Success Rate)	48.7	50.4	49.4	9.9	9.8
New Generation (Probability Adjusted)	0.8	8.2	23.9	6.2	6.1
Program Generics (100% Success Rate)	0.0	3.4	8.1	2.0	2.0
Recontracted 20 MW or Less (100% Success Rate)	0.0	0.8	2.9	1.3	1.3
Total	49.6	62.8	84.3	19.4	19.3
Gross Surplus / <Deficit>			(14.7)	(9.5)	(10.2)
Banked Surplus			0.0	0.0	0.0
Bank Usage			14.3	0.0	0.0
Bank Balance			0.0	0.0	0.0
(Shortfall) After Bank			(0.4)	(9.5)	(10.2)
Pre-June 1, 2010	49.0	55.1	63.0	13.4	13.3
Category 1	0.5	3.5	10.3	2.6	2.6
Category 2	0.0	0.0	0.0	0.0	0.0
Category 3	0.0	0.0	0.0	0.0	0.0
Total *	49.5	58.6	73.3	16.1	16.0

\* Forecast of deliveries for different portfolio content categories is for executed contracts only; does not include program generics or recontracted 20 MW or less

# PUBLIC APPENDIX

## C.2

# Quantitative Information Based on the Commission's Renewable Net Short Methodology



GWH		2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
1) Gross Surplus / <Deficit> <sup>1</sup>	Annual	789					2,364	638	(1,427)	(4,160)	(6,725)	(7,721)	(11,558)	(12,361)	(13,424)	(14,323)	(15,446)
	Compliance Period										(11,675)	(7,721)	(11,558)	(12,361)	(13,424)	(14,323)	(15,446)
2) Banked Surplus	Annual	789					2,364	638	0	0	0	0	0	0	0	0	0
	Compliance Period										638	0	0	0	0	0	0
Bank Usage	Annual						0	0	1,427	4,160	6,725	1,823	0	0	0	0	0
	Compliance Period										12,313	1,823	0	0	0	0	0
Bank Balance	Annual	789					13,498	14,136	12,709	8,548	1,823	0	0	0	0	0	0
	Compliance Period										1,823	0	0	0	0	0	0
3) Net Surplus / <Deficit> After Bank	Annual	789					2,364	638	0	0	0	(5,897)	(11,558)	(12,361)	(13,424)	(14,323)	(15,446)
	Compliance Period										638	(5,897)	(11,558)	(12,361)	(13,424)	(14,323)	(15,446)
<b>4) Rolling 20-year RNS</b>		<b>146,509</b>															
Net RPS Position <sup>2</sup>	Annual	21.1%					28.0%	27.8%	27.2%	25.6%	24.4%	23.1%	20.1%	19.6%	18.8%	18.2%	17.5%
	Compliance Period										26.2%	23.1%	20.1%	19.6%	18.8%	18.2%	17.5%
5) RPS-Eligible Procurement																	
Existing Generation		15,545	16,542	16,610	17,177	17,127	16,091	13,975	12,996	11,691	10,766	9,920	9,836	9,826	9,610	9,588	9,373
New Generation		0	18	812	1,516	2,866	3,811	5,509	5,992	6,173	6,187	6,157	6,139	6,122	6,118	6,088	6,071
Generic Program		0	11	22	246	1,220	1,969	2,019	2,019	2,019	2,024	2,019	2,019	2,019	2,024	2,019	2,019
Total	Annual	15,545	16,571	17,444	18,940	21,212	21,871	21,503	21,006	19,883	18,978	18,095	17,994	17,967	17,752	17,695	17,462
5) RPS-Eligible Procurement																	
Existing Generation				48,697			50,395				49,428	9,920	9,836	9,826	9,610	9,588	9,373
New Generation				829			8,193				23,862	6,157	6,139	6,122	6,118	6,088	6,071
Generic Program				33			3,435				8,080	2,019	2,019	2,019	2,024	2,019	2,019
Total	Compliance Period			49,559			62,023				81,370	18,095	17,994	17,967	17,752	17,695	17,462
6) Failure Rate - New Projects Not Yet Online	Annual	N/A	0%	36%	43%	42%	45%	49%	50%	50%	50%	50%	50%	50%	50%	50%	50%
	Compliance Period			35%			44%				50%	50%	50%	50%	50%	50%	50%
7) Failure Rate - Existing Generation	Annual	N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	Compliance Period			0%			0%				0%	0%	0%	0%	0%	0%	0%
8) Voluntary Margin of Over-Procurement	Annual	N/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Compliance Period			0			0				0	0	0	0	0	0	0
<b>Annual RPS Risk-adjusted Net Short Calculation</b>		<b>(789)</b>					<b>(2,364)</b>	<b>(638)</b>	<b>1,427</b>	<b>4,160</b>	<b>6,725</b>	<b>7,721</b>	<b>11,558</b>	<b>12,361</b>	<b>13,424</b>	<b>14,323</b>	<b>15,446</b>
<b>Total RPS Risk-adjusted Net Short Calculation</b>		<b>(1,823)</b>	<b>5,897</b>	<b>17,455</b>	<b>29,816</b>	<b>43,240</b>	<b>57,564</b>	<b>73,010</b>	<b>89,484</b>	<b>106,860</b>	<b>125,288</b>	<b>146,509</b>					

Notes:

<sup>1</sup> Bundled retail sales forecast for 2012-2016 and 2022-2030 is from SCE's bundled retail sales forecast; bundled retail sales forecast for 2017-2021 is from 2010 LTPP

<sup>2</sup> Net RPS Position is total RPS-eligible procurement as a percentage of bundled retail sales

GWH		2027	2028	2029	2030	
1) Gross Surplus / <Deficit> <sup>1</sup>	Annual	(16,475)	(17,375)	(18,429)	(21,220)	
	Compliance Period	(16,475)	(17,375)	(18,429)	(21,220)	
2) Banked Surplus	Annual	0	0	0	0	
	Compliance Period	0	0	0	0	
Bank Usage	Annual	0	0	0	0	
	Compliance Period	0	0	0	0	
Bank Balance	Annual	0	0	0	0	
	Compliance Period	0	0	0	0	
3) Net Surplus / <Deficit> After Bank	Annual	(16,475)	(17,375)	(18,429)	(21,220)	
	Compliance Period	(16,475)	(17,375)	(18,429)	(21,220)	
4) Rolling 20-year RNS Net RPS Position <sup>2</sup>	Annual	16.9%	16.5%	15.9%	13.8%	
	Compliance Period	16.9%	16.5%	15.9%	13.8%	
5) RPS-Eligible Procurement	Existing Generation	9,237	9,226	9,093	7,404	
	New Generation	6,054	6,050	6,021	5,794	
	Generic Program	2,019	2,024	2,019	2,019	
	Total	Annual	17,310	17,301	17,133	15,217
	Compliance Period	17,310	17,301	17,133	15,217	
5) RPS-Eligible Procurement	Existing Generation	9,237	9,226	9,093	7,404	
	New Generation	6,054	6,050	6,021	5,794	
	Generic Program	2,019	2,024	2,019	2,019	
	Total	Compliance Period	17,310	17,301	17,133	15,217
	Compliance Period	17,310	17,301	17,133	15,217	
6) Failure Rate - New Projects Not Yet Online	Annual	50%	50%	50%	50%	
	Compliance Period	50%	50%	50%	50%	
7) Failure Rate - Existing Generation	Annual	0%	0%	0%	0%	
	Compliance Period	0%	0%	0%	0%	
8) Voluntary Margin of Over-Procurement	Annual	0	0	0	0	
	Compliance Period	0	0	0	0	
<b>Annual RPS Risk-adjusted Net Short Calculation</b>		<b>16,475</b>	<b>17,375</b>	<b>18,429</b>	<b>21,220</b>	
<b>Total RPS Risk-adjusted Net Short Calculation</b>						

Notes:

<sup>1</sup> Bundled retail sales forecast for 2012-2016 and 2022-2030 is from SCE

<sup>2</sup> Net RPS Position is total RPS-eligible procurement as a percentage of

# PUBLIC APPENDIX D

## Standard Cost

## Quantification Table



<b>Joint IOU Assumption Guidelines for Table Input</b>	
<b>Table 1 Items</b>	<b>Actual</b>
Rows 2 – 8	Settlements data from 1/1/2003 to 12/31/2011
Row 9	Annualized capital cost plus applicable O&M in each year
Row 10	LCOE multiplied by actual generation in each year
Row 12	Actual bundled retail sales data reported to the CEC through the annual RPS track forms and the CPUC through the semi-annual RPS compliance report
Row 13	Total Cost / Bundled Retail Sales
<b>Table 2 Items</b>	<b>Forecast</b>
Rows 2 -10 and 15-23	Forecast begins on 1/1/2012 <ul style="list-style-type: none"> <li>• UOG Small Hydro is annualized capital cost plus 2011 O&amp;M escalated at 5% annually</li> <li>• UOG Solar is LCOE multiplied by actual generation in each year</li> </ul>
Rows 12 and 25	IOU's most current bundled retail sales forecast
Rows 13 and 26	Total Cost / Bundled Retail Sales

**CERTIFICATE OF SERVICE**

I hereby certify that, pursuant to the Commission's Rules of Practice and Procedure, I have this day served a true copy of **SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) FINAL 2012 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN (Public Version)** on all parties identified on the attached service list(s) **R.11-05-005**. Service was effected by one or more means indicated below:

- Transmitting the copies via e-mail to all parties who have provided an e-mail address.
- Placing the copies in sealed envelopes and causing such envelopes to be delivered by hand or by overnight courier to the offices of the Commissioner(s) or other addressee(s).

**ALJ DeAngelis**  
**CPUC**  
**505 Van Ness Ave.**  
**San Francisco, CA 94102**

**ALJ Simon**  
**CPUC**  
**505 Van Ness Ave.**  
**San Francisco, CA 94102**

- Placing copies in properly addressed sealed envelopes and depositing such copies in the United States mail with first-class postage prepaid to all parties for those listed on the attached non-email list.
- Directing Prographics to place the copies in properly addressed sealed envelopes and to deposit such envelopes in the United States mail with first-class postage prepaid to all parties.

Executed this **29th day of November, 2012**, at Rosemead, California.

*/S/ Melissa Hernandez*

**Melissa Hernandez**  
**Project Analyst**  
**SOUTHERN CALIFORNIA EDISON COMPANY**

2244 Walnut Grove Avenue  
Post Office Box 800  
Rosemead, California 91770



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## CALIFORNIA PUBLIC UTILITIES COMMISSION Service Lists

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### Parties

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BRYAN CRABB  
 EXECUTIVE DIRECTOR  
 CALIFORNIA SOLAR ENERGY INDUSTRIES ASSN  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: CALIFORNIA SOLAR ENERGY INDUSTRIES  
 ASSOCIATION

CARRIE A. DOWNEY  
 LAW OFFICES OF CARRIE ANNE DOWNEY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: IMPERIAL IRRIGATION DISTRICT

CHRIS LEVERIZA  
 GLACIAL ENERGY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: GLACIAL ENERGY

CRAIG LEWIS  
 RIGHTCYCLE ENTERPRISES  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: RIGHTCYCLE

DANIEL W. DOUGLASS  
 DOUGLASS & LIDDELL  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: DIRECT ACCESS CUSTOMER  
 COALITION/WESTERN POWER TRADING  
 FORUM/ENXCO, INC./RECURRENT ENERGY/EDF  
 INDUSTRIAL POWER SERVICES (CA), LLC

ELIZABETH WRIGHT  
 OCCIDENTAL POWER SERVICES, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: OCCIDENTAL POWER SERVICES, INC.

JEAN-CALUDE BERTET  
 DEPUTY CITY ATTORNEY  
 LOS ANGELES DEPT. OF WATER AND POWER  
 EMAIL ONLY

JESSICA NELSON  
 PLUMAS-SIERRA RURAL ELECTRIC CO-OP  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

EMAIL ONLY, CA 00000  
 FOR: LOS ANGELES DEPARTMENT OF WATER &  
 POWER

JODY LONDON  
 JODY LONDON CONSULTING  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: SUSTAINABLE CONSERVATION AND RCM  
 INTERNATIONAL

JUSTIN C. WYNNE  
 ATTORNEY AT LAW  
 BRAUN BLAISING MCLAUGHLIN, P.C.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: CALIFORNIA MUNICIPAL UTILITIES  
 ASSOCIATION

MATTHEW FREEDMAN  
 THE UTILITY REFORM NETWORK  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: THE UTILITY REFORM NETWORK

SCOTT BLAISING  
 BRAUN BLAISING MCLAUGHLIN, P.C.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: CITY OF CERRITOS

TAM HUNT  
 ATTORNEY  
 HUNT CONSULTING  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: RIGHTCYCLE

TOM KIRK  
 EXECUTIVE DIRECTOR  
 COACHELLA VALLEY ASSN. OF GOVERNMENTS  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: COACHELLA VALLEY ASSOCIATION OF  
 GOVERNMENTS

WILL PLAXICO  
 PROJECT DEVELOPMENT MGR  
 AXIO POWER, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: AXIO POWER, INC.

RANDALL W. HARDY

JOHN W. LESLIE, ESQ  
 MCKENNA LONG & ELDRIDGE LLP  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: SHELL ENERGY NORTH AMERICA (U.S.),  
 L.P.

M. GRADY MATHAI-JACKSON  
 PACIFIC GAS & ELECTRIC COMPANY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: PACIFIC GAS & ELECTRIC COMPANY

RICK NOGER  
 PRAXAIR PLAINFIELD, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: PRAXAIR PLAINFIELD, INC.

STEPHEN BURNAGE  
 SOLAR EXPRESS TRANSMISSION, LLC  
 EMAIL ONLY  
 EMAIL ONLY, NV 00000  
 FOR: SOLAR EXPRESS TRANSMISSION, LLC

TAM HUNT  
 HUNT CONSULTING  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000  
 FOR: CLEAN COALITION (FORMERLY FIT)

TRACY PHILLIPS  
 TIGER NATURAL GAS  
 EMAIL ONLY  
 EMAIL ONLY, TX 00000  
 FOR: TIGER NATURAL GAS

LAURA WISLAND  
 UNION OF CONCERNED SCIENTISTS  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000  
 FOR: UNION OF CONCERNED SCIENTISTS

ANDREW LUSCZ



HARDY ENERGY CONSULTING  
 EMAIL ONLY  
 EMAIL ONLY, WA 00000-0000  
 FOR: RANDALL W. HARDY

GLACIAL ENERGY OF CALIFORNIA  
 5326 YACHT HAVEN GRANDE BOX 36  
 ST THOMAS, VI 00802  
 FOR: GLACIAL ENERGY OF CALIFORNIA

DANIEL V. GULINO  
 RIDGEWOOD POWER MANAGEMENT, LLC  
 14 PHILIPS PKWY  
 MONTVALE, NJ 07645-1811  
 FOR: RIDGEWOOD POWER MANAGEMENT, LLC

ABRAHAM SILVERMAN  
 SR. COUNSEL, REGULATORY  
 NRG ENERGY, INC.  
 211 CARNEGIE CENTER DRIVE  
 PRINCETON, NJ 08540  
 FOR: NRG COMPANIES, INC. (CABRILLO  
 POWER I, LLC/CABRILLO POWER II, LLC/EL  
 SEGUNDO POWER, LLC/LONG BEACH  
 GENERATION, LLC/NRG SOLAR BLYTHE, LLC

JAMES MUELLER  
 CONSOLIDATED EDISON SOLUTIONS, INC.  
 100 SUMMIT LAKE DRIVE, STE. 410  
 VALHALLA, NY 10595  
 FOR: CONSOLIDATED EDISON SOLUTIONS, INC.

RHONE RESCH  
 SOLAR ENERGY INDUSTRIES ASSOCIATION  
 575 7TH ST., NW, STE. 400  
 WASHINGTON, DC 20004-1612  
 FOR: SOLAR ENERGY INDUSTRIES ASSOCIATION

KEITH MCCREA  
 ATTORNEY AT LAW  
 SUTHERLAND, ASBILL & BRENNAN  
 1275 PENNSYLVANIA AVENUE, NW  
 WASHINGTON, DC 20004-2415  
 FOR: CA MANUFACTURERS & TECHNOLOGY  
 ASSN./LS POWER ASSOCIATES, L.P.

JAMES P. WHITE  
 TRANSCANADA CORPORATION  
 4547 RINCON PLACE  
 MONTCLAIR, VA 22025  
 FOR: CHINOOK POWER TRANSMISSION,  
 LLC/ZEPHYR POWER TRANSMISSION, LLC

JEFF MEYER  
 PATHFINDER RENEWABLE WIND ENERGY, LLC  
 2720 PARK STREET, STE. 222  
 JACKSONVILLE, FL 32205  
 FOR: PATHFINDER RENEWABLE WIND ENERGY,  
 LLC

ALRINE WILLIAMS  
 LEGAL COUNSEL  
 LIBERTY POWER HOLDINGS, LLC (1371)  
 1901 W. CYPRESS CREEK ROAD, STE. 600  
 FORT LAUDERDALE, FL 33309  
 FOR: LIBERTY POWER DELAWARE, LLC AND  
 LIBERTY POWER HOLDINGS, LLC

JOHN CASADONT  
 GENERAL COUNSEL  
 BLUE STAR ENERGY SOLUTIONS  
 363 WEST ERIE ST., STE. 700  
 CHICAGO, IL 60654  
 FOR: BLUE STAR ENERGY

JOHN KERN  
 BLUESTAR ENERGY SERVICES  
 363 ERDY ERIE STREET, 7TH FLOOR  
 CHICAGO, IL 60654  
 FOR: BLUESTAR ENERGY SERVICES

MADOLON A. KUCHERA  
 ASSOC. GEN. COUNSEL - VP REGULATORY  
 BLUESTAR ENERGY SOLUTIONS  
 363 WEST ERIE STREET, SUITE 700  
 CHICAGO, IL 60654  
 FOR: BLUESTAR ENERGY SOLUTIONS

ERIN SZALSKOWSKI  
 CORPORATE COUNSEL  
 CLEAN LINE ENERGY PARTNERS, LLC  
 1001 MCKINNEY ST., STE. 700  
 HOUSTON, TX 77002  
 FOR: CENTENNIAL WEST CLEAN LINE, LLC

GRETCHEN SCHOTT  
 BP WIND ENERGY NORTH AMERICA INC.  
 700 LOUISIANA STREET, 33RD FLOOR  
 HOUSTON, TX 77002

ANGELA GREGORY  
 DIR - WHOLESALE COMPLIANCE, U.S.  
 DIRECT ENERGY BUSINESS  
 12 GREENWAY PLAZA, STE. 600

FOR: BP WIND ENERGY NORTH AMERICA, INC.

HOUSTON, TX 77046

FOR: DIRECT ENERGY BUSINESS

KEVIN BOUDREAU

ENERCAL USA

7660 WOODWAY DRIVE, STE 471A

HOUSTON, TX 77063

FOR: ENERCAL USA

GARSON KNAPP

GEXA ENERGY CALIFORNIA, LLC

20455 STATE HIGHWAY 249, STE. 200

HOUSTON, TX 77070

FOR: GEXA ENERGY CALIFORNIA, LLC

KARA MORGAN

TRANSWEST EXPRESS LLC

555 SEVENTEENTH STREET, STE. 2400

DENVER, CO 80202

FOR: TRANSWEST EXPRESS, LLC

THOMAS LOQUVAM

SENIOR ATTORNEY

PINNACLE WEST CAPITAL CORPORATION

400 N. FIFTH STREET, MS 8695

PHOENIX, AZ 85004

FOR: ARIZONA PUBLIC SERVICE COMPANY

ADRIENNE SMITH

VP - ADMINISTRATION

TRES AMIGAS, LLC

119 EAST MARCY ST., STE. 104

SANTA FE, NM 87501

FOR: TRES AMIGAS, LLC

DAVID SAUL

PACIFIC SOLAR & POWER CORPORATION

2850 W. HORIZON RIDGE PKWY, SUITE 200

HENDERSON, NV 89052

FOR: SOLEL, INC.

PAUL THOMSEN

DIR. - POLICY & BUSINESS DEVELOPMENT

ORMAT TECHNOLOGIES INC.

6225 NEIL ROAD

RENO, NV 89511

FOR: ORMAT TECHNOLOGIES INC.

CAMILLE A. GOULET

GENERAL COUNSEL

LOS ANGELES COMMUNITY COLLEGE DISTRICT

770 WILSHIRE BOULEVARD

LOS ANGELES, CA 90017

FOR: LOS ANGELES COMMUNITY COLLEGE DISTRICT

KELLY CAUVEL

BUILD-LACCD

915 WILSHIRE BOULEVARD

LOS ANGELES, CA 90017

FOR: LOS ANGELES COMMUNITY COLLEGE DISTRICT

TOM HALL

INTERIM EXEC. DIR.-FACILITIES PLANNING

LOS ANGELES COMMUNITY COLLEGE DISTRICT

770 WILSHIRE BOULEVARD

LOS ANGELES, CA 90017

FOR: LOS ANGELES COMMUNITY COLLEGE DISTRICT

NORMAN A. PEDERSEN

HANNA AND MORTON LLP

444 S FLOWER ST., SUITE 1500

LOS ANGELES, CA 90071-2916

FOR: SOUTHERN CALIFORNIA GENERATION COALITION / SOUTHERN CALIFORNIA PUBLIC POWER AUTHORITY

DIANE MOSS

FOUNDER, SECRETARY OF THE BOARD

RENEWABLES 100 POLICY INSTITUTE

35316 MULHOLLAND HWY

MALIBU, CA 90265

FOR: RENEWABLES 100 POLICY INSTITUTE

MICHAEL MAZUR

PRINCIPAL

3 PHASES RENEWABLES, LLC

2100 SEPULVEDA BLVD, SUITE 38

MANHATTAN BEACH, CA 90266

FOR: 3 PHASES RENEWABLES/3 PHASES ELECTRICAL CONSULTING

SUSAN MUNVES

ENERGY AND GREEN BLDG. PROG. ADMIN.

CITY OF SANTA MONICA

1212 5TH STREET, FIRST FLOOR

SANTA MONICA, CA 90401

FOR: CITY OF SANTA MONICA

ADAM GREEN  
SOLARRESERVE  
2425 OLYMPIC BLVD., STE. 500E  
SANTA MONICA, CA 90404  
FOR: SOLARRESERVE, LLC

MARK MCDANNEL  
COUNTY SANITATION DISTRICT OF L.A.  
1955 WORKMAN MILL ROAD  
WHITTIER, CA 90601  
FOR: COUNTY SANITATION DISTRICT OF LOS ANGELES (LOS ANGELES COUNTY SANITATION DISTRICTS)

INGER GOODMAN  
COMMERCE ENERGY INC  
1 CENTERPOINTE DRIVE, SUITE 350  
LA PALMA, CA 90623-2520  
FOR: COMMERCE ENERGY, INC.

ANGEL AYALA  
AMONIX, INC.  
1709 APOLLO COURT  
SEAL BEACH, CA 90740  
FOR: AMONIX, INC.

PAUL DELANEY  
V.P.  
AMERICAN UTILITY NETWORK (A.U.N.)  
10705 DEER CANYON DRIVE  
ALTA LOMA, CA 91737  
FOR: AMERICAN UTILITY NETWORK

CATHY A. KARLSTAD  
ATTORNEY  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVE.  
ROSEMEAD, CA 91770  
FOR: SOUTHERN CALIFORNIA EDISON COMPANY

KEITH SWITZER  
VP REGULATORY AFFAIRS  
GOLDEN STATE WATER COMPANY  
630 EAST FOOTHILL BLVD.  
SAN DIMAS, CA 91773-9016  
FOR: GOLDEN STATE WATER COMPANY

CHERYL PONDS  
OFFICE OF THE CITY ATTORNEY  
276 FOURTH AVENUE  
CHULA VISTA, CA 91910  
FOR: THE CITY OF CHULA VISTA

MARY C. HOFFMAN  
PRESIDENT  
SOLUTIONS FOR UTILITIES, INC.  
1192 SUNSET DRIVE  
VISTA, CA 92081  
FOR: SOLUTIONS FOR UTILITIES, INC.

AIMEE M. SMITH  
SEMPRA ENERGY  
101 ASH STREET, HQ-12  
SAN DIEGO, CA 92101  
FOR: SAN DIEGO GAS AND ELECTRIC CO.

DANIEL A. KING  
SEMPRA GENERATION  
101 ASH STREET, HQ 14  
SAN DIEGO, CA 92101  
FOR: SEMPRE GENERATION

FREDERICK M. ORTLIEB  
DEPUTY CITY ATTORNEY  
CITY OF SAN DIEGO  
1200 THIRD AVENUE, SUITE 1100  
SAN DIEGO, CA 92101  
FOR: CITY OF SAN DIEGO

DONALD C. LIDDELL  
DOUGLASS & LIDDELL  
2928 2ND AVENUE  
SAN DIEGO, CA 92103  
FOR: CALIF. ENERGY STORAGE ALLIANCE / WALMART STORES, INC. AND SAM'S WEST, INC. / AGPOWER GROUP, LLC / CLEAN ENERGY RENEWABLE FUELS, LLC.

THOMAS CORR  
LAW OFFICE OF THOMAS CORR  
618 W. LEWIS STREET  
SAN DIEGO, CA 92103  
FOR: NOBLE AMERICAS ENERGY SOLUTIONS, LLC

THOMAS R. DARTON  
PILOT POWER GROUP, INC. (1365)  
8910 UNIVERSITY CENTER LANE, STE. 520

JAMES TURNER  
ENERGYSOURCE, LLC  
321 SOUTH WATERMAN AVE., STE. 200

SAN DIEGO, CA 92122  
FOR: PILOT POWER GROUP, INC.

EL CENTRO, CA 92243  
FOR: ENERGYSOURCE, LLC

MARK S. SHIRILAU, PH.D, PE  
PRESIDENT & CEO  
ALOHA SYSTEMS, INCORPORATED  
8539 BARNWOOD LANE  
RIVERSIDE, CA 92508-7126  
FOR: ALOHA SYSTEMS, INCORPORATED

GLORIA BRITTON  
ANZA ELECTRIC COOPERATIVE, INC. (909)  
PO BOX 391909 / 58470 HWY 371  
ANZA, CA 92539  
FOR: ANZA ELECTRIC COOPERATIVE

MICHAEL LEVIN  
DIRECTOR - GOVERNMENT AFFAIRS  
FLEXENERGY, INC.  
9400 TOLEDO WAY  
IRVINE, CA 92618  
FOR: FLEXENERGY, INC.

PHILLIP REESE  
C/O REESE-CHAMBERS SYSTEMS CONSULTANTS,  
PO BOX 8  
3379 SOMIS ROAD  
SOMIS, CA 93066  
FOR: THE CALIFORNIA BIOMASS ENERGY  
ALLIANCE

TAM HUNT  
ATTORNEY  
124 W. ALAMAR AVE., NO. 3  
SANTA BARBARA, CA 93105  
FOR: COMMUNITY ENVIRONMENTAL COUNCIL

ANDREA MORRISON  
MARKET DEVELOPMENT REGIONAL DIR.  
DIRECT ENERGY SERVICES, LLC  
415 DIXON STREET  
ARROYO GRANDE, CA 93420  
FOR: DIRECT ENERGY SERVICES, LLC

TOM WHEELER  
SUPERVISOR - DISTRICT 5  
MADERA COUNTY BOARD OF SUPERVISORS  
200 W. FOURTH STREET  
MADERA, CA 93637  
FOR: COUNTY OF MADERA

JOSEPH LANGENBERG  
CENTRAL CALIFORNIA POWER  
5125 NORTH MARTY AVENUE, NO.324  
FRESNO, CA 93711

DAVID ORTH  
SAN JOAQUIN VALLEY POWER AUTHORITY  
ADMIN OFF @KINGS RIVER CONSERV DISTRICT  
4886 EAST JENSEN AVENUE  
FRESNO, CA 93725  
FOR: SAN JOAQUIN VALLEY POWER  
AUTHORITY/KING'S RIVER CONSERVATION  
DISTRICT

SUE MARA  
PRINCIPAL  
RTO ADVISORS, LLC  
164 SPRINGDALE WAY  
REDWOOD CITY, CA 94062  
FOR: RETAIL ENERGY SUPPLY ASSOCIATION  
(RESA)

MARC D. JOSEPH  
ADAMS, BROADWELL, JOSEPH & CARDOZO  
601 GATEWAY BLVD., STE. 1000  
SOUTH SAN FRANCISCO, CA 94080  
FOR: COALITION OF CALIFORNIA UTILITY  
EMPLOYEES

DIANA L. LEE  
CALIF PUBLIC UTILITIES COMMISSION  
LEGAL DIVISION  
ROOM 4107  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: DRA

JEANNE M. SOLE  
DEPUTY CITY ATTORNEY  
CITY AND COUNTY OF SAN FRANCISCO  
1 DR. CARLTON B. GOODLETT PLACE, RM. 234  
SAN FRANCISCO, CA 94102-4682  
FOR: CITY AND COUNTY OF SAN FRANCISCO

NORMAN J. FURUTA  
ASSOC. COUNSEL - REG LAW  
FEDERAL EXECUTIVE AGENCIES  
DEPT OF THE NAVY  
1455 MARKET ST., SUITE 1744  
SAN FRANCISCO, CA 94103-1399

FOR: FEDERAL EXECUTIVE AGENCIES

NORA SHERIFF  
 ALCANTAR & KAHL  
 33 NEW MONTGOMERY STREET, SUITE 1850  
 SAN FRANCISCO, CA 94105  
 FOR: ENERGY PRODUCERS AND USERS  
 COALITION.

WILLIAM H. BOOTH  
 ATTORNEY AT LAW  
 ALCANTAR & KAHL  
 33 NEW MONTGOMERY ST., STE. 1850  
 SAN FRANCISCO, CA 94105  
 FOR: RIDGEWOOD RENEWABLE POWER, LLC AND  
 RIDGEWOOD OLINDA, LLC/CALIFORNIA LARGE  
 ENERGY CONSUMERS ASSOCIATION (CLECA)

BRIAN T. CRAGG  
 GOODIN, MACBRIDE, SQUERI, DAY & LAMPREY  
 505 SANSOME STREET, SUITE 900  
 SAN FRANCISCO, CA 94111  
 FOR: INDEPENDENT ENERGY PRODUCERS  
 ASSOCIATION (IEPA)/CAITHNESS CORPORATION

JAMES D. SQUERI  
 ATTORNEY AT LAW  
 GOODIN, MACBRIDE, SQUERI, DAY & LAMPREY  
 505 SANSOME STREET, SUITE 900  
 SAN FRANCISCO, CA 94111  
 FOR: POWEREX CORPORATION

JEANNE B. ARMSTRONG  
 ATTORNEY  
 GOODIN MACBRIDE SQUERI DAY & LAMPREY LLP  
 505 SANSOME STREET, SUITE 900  
 SAN FRANCISCO, CA 94111  
 FOR: SOLAR ENERGY INDUSTRIES ASSOCIATION

MICHAEL DAY  
 GOODIN MACBRIDE SQUERI DAY & LAMPREY LLP  
 505 SANSOME STREET, STE. 900  
 SAN FRANCISCO, CA 94111  
 FOR: ABENGOA SOLAR, INC.

NANCY L. MURRAY  
 ATTORNEY AT LAW  
 NATURENER USA, LLC.  
 394 PACIFIC AVENUE, SUITE 300  
 SAN FRANCISCO, CA 94111  
 FOR: NATURENER USA, LLC

RACHEL MCMAHON  
 FIRST SOLAR  
 353 SACRAMENTO ST., STE. 2100  
 SAN FRANCISCO, CA 94111  
 FOR: FIRST SOLAR

SETH D. HILTON  
 STOEL RIVES, LLP  
 555 MONTGOMERY ST., SUITE 1288  
 SAN FRANCISCO, CA 94111  
 FOR: DUKE ENERGY

SUZY HONG  
 ATTORNEY AT LAW  
 GOODIN MACBRIDE SQUERI DAY & LAMPREY  
 505 SANSOME STREET, SUITE 900  
 SAN FRANCISCO, CA 94111  
 FOR: TERRA-GEN POWER, LLC

VIDHYA PRABHAKARAN  
 DAVIS WRIGHT & TREMAINE LLP  
 505 MONTGOMERY STREET, SUITE 800  
 SAN FRANCISCO, CA 94111  
 FOR: THE LEAF EXCHANGE, LLC

MICHAEL B. DAY  
 ATTORNEY  
 GOODIN MACBRIDE SQUERI DAY & LAMPREY LLP  
 505 SANSOME STREET, STE 900  
 SAN FRANCISCO, CA 94111-3133  
 FOR: CALENERGY GENERATION

DAVID L. HUARD  
 MANATT, PHELPS & PHILLIPS, LLP  
 ONE EMBARCADERO CENTER, STE 2900  
 SAN FRANCISCO, CA 94111-3736  
 FOR: COUNTY OF LOS ANGELES

TODD EDMISTER  
 ATTORNEY AT LAW  
 BINGHAM MCCUTCHEN LLP  
 THREE EMBARCADERO CENTER  
 SAN FRANCISCO, CA 94111-4067  
 FOR: STIRLING ENERGY SYSTEMS, INC. (SES)

NICOLE SHAUGHNESSY

JOSEPH M. KARP

MANAGING DIR.  
EVOLUTION MARKETS  
101 CALIFORNIA STREET, STE. 2750  
SAN FRANCISCO, CA 94111-5802  
FOR: EVOLUTION MARKETS, INC.

ATTORNEY AT LAW  
WINSTON & STRAWN LLP  
101 CALIFORNIA STREET, 39TH FLOOR  
SAN FRANCISCO, CA 94111-5894  
FOR: CALIFORNIA WIND ENERGY  
ASSN./ABENGOA SOLAR INC./AUSRA INC AND  
BRIGHTSOURCE ENERGY INC.

EDWARD W. O'NEILL  
ATTORNEY AT LAW  
DAVIS WRIGHT TREMAINE LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111-6533  
FOR: CALIFORNIA LARGE ENERGY CONSUMERS  
ASSOCIATION

JEFFREY P. GRAY  
DAVIS WRIGHT TREMAINE, LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111-6533  
FOR: CALPINE POWER AMERICA-CA, LLC

ROBERT B. GEX  
ATTORNEY AT LAW,  
DAVIS WRIGHT TREMAINE LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111-6533  
FOR: REPUBLIC CLOVERLEAF SOLAR LLC

STEVEN F. GREENWALD  
ATTORNEY AT LAW  
DAVIS WRIGHT TREMAINE LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111-6533  
FOR: NEWBERRY GEOTHERMAL LLC /  
DAVENPORT NEWBERRY HOLDINGS, LLC /  
NORTHWEST ENERGY SYSTEMS CO./IDAHO WIND  
PARTNERS 1, LLC/CAPITAL POWER  
CORPORATION

SARA STECK MYERS  
ATTORNEY AT LAW  
122 28TH AVE.  
SAN FRANCISCO, CA 94121  
FOR: CENTER FOR ENERGY EFFICIENCY AND  
RENEWABLE TECHNOLOGIES

GABE PETLIN  
3DEGREES  
38 KEYES AVE., STE. 300  
SAN FRANCISCO, CA 94129-1757

KERRY HATTEVIK  
DIR - WEST MARKET AFFAIRS  
NEXTERA ENERGY RESOURCES  
829 ARLINGTON BLVD.  
EL CERRITO, CA 94530  
FOR: NEXTERA ENERGY RESOURCES

JASON B. KEYES  
KEYES FOX & WIEDMAN, LLP  
436 14TH STREET, STE. 1305  
OAKLAND, CA 94612  
FOR: SUNEDISON

JOSEPH F. WIEDMAN  
COUNSEL  
KEYES, FOX & WIEDMAN LLP  
436 14TH STREET, SUITE 1305  
OAKLAND, CA 94612  
FOR: SUNPOWER CORPORATION

KEVIN T. FOX  
KEYES FOX & WIEDMAN, LLP  
436 14TH STREET, SUITE 1305  
OAKLAND, CA 94612  
FOR: SILVERADO POWER, LLC

LAURENCE G. CHASET  
KEYES FOX & WIEDMAN, LLP  
436 14TH STREET, STE. 1305  
OAKLAND, CA 94612  
FOR: TENASKA SOLAR VENTURES

SKY STANFIELD  
KEYES, FOX & WIEDMAN LLP  
436 14TH ST., STE. 1305  
OAKLAND, CA 94612  
FOR: INTERSTATE RENEWABLE ENERGY COUNCIL

ZEYNEP ERDAL

PATRICK VAN BEEK

CAL. WASTEWATER CLIMATE CHANGE GROUP  
 155 GRAND AVE., STE. 800  
 OAKLAND, CA 94612  
 FOR: CALIFORNIA WASTEWATER CLIMATE  
 CHANGE GROUP

GREGG MORRIS  
 DIRECTOR  
 GREEN POWER INSTITUTE  
 2039 SHATTUCK AVE., SUITE 402  
 BERKELEY, CA 94704  
 FOR: GREEN POWER INSTITUTE

CLYDE MURLEY  
 CONSULTANT TO NRDC  
 1031 ORDWAY STREET  
 ALBANY, CA 94706  
 FOR: THE COMMUNITY COLLEGE LEAGUE OF  
 CALIFORNIA

ELIZABETH KELLY  
 REG. AND LEGAL COUNSEL  
 MARIN ENERGY AUTHORITY  
 781 LINCOLN AVENUE, SUITE 320  
 SAN RAFAEL, CA 94901  
 FOR: MARIN ENERGY AUTHORITY

JAMES WEIL  
 DIRECTOR  
 AGLET CONSUMER ALLIANCE  
 PO BOX 866  
 NOVATO, CA 94948  
 FOR: AGLET CONSUMER ALLIANCE

L. JAN REID  
 COAST ECONOMIC CONSULTING  
 3185 GROSS ROAD  
 SANTA CRUZ, CA 95062  
 FOR: L. JAN REID

JOHN R. REDDING  
 ARCTURUS ENERGY CONSULTING  
 44810 ROSEWOOD TERRACE  
 MENDOCINO, CA 95460  
 FOR: SILICON VALLEY MANUFACTURERS GROUP

JUDITH SANDERS  
 CALIFORNIA ISO  
 250 OUTCROPPING WAY  
 FOLSOM, CA 95630  
 FOR: CALIFORNIA INDEPENDENT SYSTEM

COMMERCIAL ENERGY OF CALIFORNIA  
 7677 OAKPORT STREET, STE. 525  
 OAKLAND, CA 94621  
 FOR: COMMERCIAL ENERGY OF CALIFORNIA  
 DBA COMMERCIAL ENERGY OF MONTANA

NEAL DE SNOO  
 CITY OF BERKELEY  
 2180 MILVIA STREET, 2ND FLOOR  
 BERKELEY, CA 94704  
 FOR: EAST BAY POWER AUTHORITY/CITY OF  
 BERKELEY

R. THOMAS BEACH  
 PRINCIPAL CONSULTANT  
 CROSSBORDER ENERGY  
 2560 NINTH STREET, SUITE 213A  
 BERKELEY, CA 94710-2557  
 FOR: THE CALIFORNIA COGENERATION COUNCIL

ROY PHILLIPS  
 PRESIDENT / CEO  
 REP ENERGY, INC.  
 40 MARK DRIVE  
 SAN RAFAEL, CA 94903  
 FOR: REP ENERGY, INC.

MAHLON ALDRIDGE  
 VP - STRATEGIC DEVELOPMENT  
 ECOLOGY ACTION  
 877 CEDAR STREET, STE. 240  
 SANTA CRUZ, CA 95060-3938  
 FOR: ECOLOGY ACTION

MICHAEL E. BOYD  
 PRESIDENT  
 CALIFORNIANS FOR RENEWABLE ENERGY, INC.  
 5439 SOQUEL DRIVE  
 SOQUEL, CA 95073  
 FOR: CALIFORNIANS FOR RENEWABLE  
 ENERGY, INC.

CHRISTIANA DARLINGTON  
 GENERAL COUNSEL  
 PLACER COUNTY AIR POLLUTION CONTROL DIST  
 175 FULWEILER AVE.  
 AUBURN, CA 95603  
 FOR: PLACER COUNTY AIR POLLUTION  
 CONTROL DISTRICT

KELLY M. FOLEY  
 ATTORNEY  
 THE VOTE SOLAR INITIATIVE  
 2089 TRACY COURT  
 FOLSOM, CA 95630

OPERATORS

FOR: THE VOTE SOLAR INITIATIVE

MARTIN HERMANN  
 8MINUTENERGY RENEWABLES, LLC  
 111 WOODMERE ROAD, STE. 190  
 FOLSOM, CA 95630  
 FOR: 8MINUTENERGY RENEWABLES, LLC

CAROLYN KEHREIN  
 ENERGY MANAGEMENT SERVICES  
 2602 CELEBRATION WAY  
 WOODLAND, CA 95776  
 FOR: ENERGY USERS FORUM

JAN MCFARLAND  
 CAEATFA  
 915 CAPITOL MALL, RM. 468  
 SACRAMENTO, CA 95814  
 FOR: AMERICANS FOR SOLAR POWER

JIM METROPULOS  
 SR. ADVOCATE  
 SIERRA CLUB CALIFORNIA  
 801 K STREET, SUITE 2700  
 SACRAMENTO, CA 95814  
 FOR: SIERRA CLUB CALIFORNIA

JEDEDIAH J. GIBSON  
 ATTORNEY  
 ELLISON, SCHNEIDER & HARRIS, L.L.P.  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816  
 FOR: BEAR VALLEY ELECTRIC SERVICE

RONALD LIEBERT  
 ATTORNEY AT LAW  
 ELLISON SCHNEIDER & HARRIS LLP  
 2600 CAPITOL AVENUE, STE. 400  
 SACRAMENTO, CA 95816  
 FOR: NV ENERGY, INC.

SAMANTHA G. POTTENGER  
 ELLISON, SCHNEIDER AND HARRIS L.L.P.  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816  
 FOR: FORTISTAR METHANE GROUP

ANDREW B. BROWN  
 ELLISON SCHNEIDER & HARRIS, L.L.P.  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816-5905  
 FOR: CONSTELLATION NEWENERGY,  
 INC./ALLIANCE FOR RETAIL ENERGY MARKETS

DOUGLAS K. KERNER  
 ATTORNEY AT LAW  
 ELLISON, SCHNEIDER & HARRIS, LLP  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816-5905  
 FOR: SIERRA PACIFIC INDUSTRIES

JEDEDIAH J. GIBSON  
 ATTORNEY AT LAW  
 ELLISON SCHNEIDER & HARRIS LLP  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816-5905  
 FOR: SIERRA PACIFIC POWER COMPANY

LYNN M. HAUG  
 ELLISON, SCHNEIDER & HARRIS, L.L.P.  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816-5931  
 FOR: FUELCELL ENERGY, INC.

WILLIAM W. WESTERFIELD III  
 SR. ATTORNEY - OFF. OF GEN. COUNSEL  
 SACRAMENTO MUNICIPAL UTILITY DISTRICT  
 6201 S STREET, M.S. B402  
 SACRAMENTO, CA 95817  
 FOR: SACRAMENTO MUNICIPAL UTILITY  
 DISTRICT

RACHEL GOLD  
 LARGE SCALE SOLAR ASSOCIATION  
 2501 PORTOLA WAY  
 SACRAMENTO, CA 95818  
 FOR: LARGE SCALE SOLAR ASSOCIATION

MARK HENWOOD  
 HENWOOD ASSOCIATES, INC.  
 7311 GREENHAVEN DRIVE, STE. 275  
 SACRAMENTO, CA 95831  
 FOR: HENWOOD ASSOCIATES, INC.

KAREN NORENE MILLS  
 ATTORNEY AT LAW  
 CALIFORNIA FARM BUREAU FEDERATION  
 2300 RIVER PLAZA DRIVE

ROB NEENAN  
 CALIFORNIA LEAGUE OF FOOD PROCESSORS  
 1755 CREEKSIDE OAKS DRIVE, SUITE 250  
 SACRAMENTO, CA 95833



SACRAMENTO, CA 95833  
FOR: CALIFORNIA FARM BUREAU FEDERATION

FOR: CALIFORNIA LEAGUE OF FOOD  
PROCESSORS

ANN L. TROWBRIDGE  
DAY CARTER & MURPHY LLP  
3620 AMERICAN RIVER DRIVE, SUITE 205  
SACRAMENTO, CA 95864  
FOR: AGRICULTURAL ENERGY CONSUMERS  
ASSOCIATION

PETER EICHLER  
CALIFORNIA PACIFIC ELECTRIC COMPANY  
933 ELOISE AVENUE  
SOUTH LAKE TAHOE, CA 96150  
FOR: CALIFORNIA PACIFIC ELECTRIC  
COMPANY (CALPECO)

KEVIN A. LYNCH  
IBERDROLA RENEWABLES INC  
1125 NW COUCH ST., SUITE 700  
PORTLAND, OR 97209  
FOR: IBERDROLA RENEWABLES, INC.

MARY WIENCKE  
PACIFICORP  
825 N. E. MULTNOMAH, SUITE 1800  
PORTLAND, OR 97232  
FOR: PACIFICORP

THOM A. FISCHER  
PRESIDENT  
TOLLHOUSE ENERGY COMPANY  
3633 ALDERWOOD AVENUE  
BELLINGHAM, WA 98225  
FOR: TOLLHOUSE ENERGY COMPANY

PAUL BRACHVOGEL  
GEN. COUNSEL  
PU DISTRICT NO.1 OF COWLITZ COUNTY  
961 12TH AVENUE / PO BOX 3007  
LONGVIEW, WA 98632  
FOR: PUBLIC UTILITY DISTRICT NO.1 OF  
COWLITZ COUNTY

## Information Only

---

KIM MOORE  
ARGUS MEDIA  
EMAIL ONLY  
EMAIL ONLY, UK 000 000  
UNITED KINGDOM

NANCY NORRIS  
POWEREX CORPORATION  
EMAIL ONLY  
EMAIL ONLY, BC 000 000  
CANADA

ADAM ATKINSON-LEWIS  
NATEL ENERGY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ALEX MARTIN  
NEXTLIGHT RENEWABLE POWER, LLC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

AMBER RIESENHUBER  
ENERGY ANALYST  
INDEPENDENT ENERGY PRODUCERS ASSOC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ANDRA PLIGAVKO  
FIRST SOLAR DEVELOPMENT, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ANDREW WANG  
SOLARRESERVE, LLC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ARI CITRIN  
PROSOLIA SOLAR, CFO NORTH AMERICA  
EMAIL ONLY  
EMAIL ONLY, CA 00000

BARBARA R. BARKOVICH  
BARKOVICH & YAP, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

BEN REES  
EVOLUTION MARKETS, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

FOR: .

BILLY BLATTNER  
 SAN DIEGO GAS & ELECTRIC COMPANY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

BRADLEY A. ANDERSON  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

BRENDON CUSSIO  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

BRUCE MCLAUGHLIN  
 ATTORNEY AT LAW  
 BRAUN & BLAISING P.C.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

BRYAN MILLER  
 CONSTELLATION ENERGY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

CAITLIN COLLINS LIOTIRIS  
 ENERGY STRATEGIES, LLC  
 EMAIL ONLY  
 EMAIL ONLY, UT 00000

CARLOS LAMAS-BABBINI  
 PROGRAM MGR.  
 COMVERGE, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

CASE COORDINATION  
 PACIFIC GAS AND ELECTRIC COMPANY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

CATHIE ALLEN  
 REGULATORY MGR.  
 PACIFICORP  
 EMAIL ONLY  
 EMAIL ONLY, OR 00000

CHASE ADAMS  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

CHUCK GILFOY  
 DIR. - MARKETING & ASSET OPTIMIZATION  
 CAENERGY OPERATING CORPORATION  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

DAN CHIA  
 DEP. DIR. - GOVERNMENT AFFAIRS  
 SOLARCITY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

DANIELLE OSBORN-MILLS  
 REGULATORY AFFAIRS COORDINATOR  
 CEERT  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

DAVE OMINSKY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

DAVID E. MORSE  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

DAVID TOWNLEY  
 US SALES & MARKETING  
 INFANIA CORPORATION  
 EMAIL ONLY  
 EMAIL ONLY, WA 00000

DIANE I. FELLMAN  
 DIRECTOR, REGULATORY & GOV'T AFFAIRS  
 NRG WEST & SOLAR  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

DOCKET COORDINATOR  
 KEYS AND FOX  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

DONALD E. OSBORN  
SPECTRUM ENERGY DEVELOPMENT INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

DOUG DAVIE  
WELLHEAD ELECTRIC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ELAINE SISON-LEBRILLA  
SACRAMENTO MUNICIPAL UTILITY DISTRICT  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ELIZABETH HADLEY  
REDDING ELECTRIC UTILITY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ERIC THOMPSON  
NATELENERGY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

ERIN GRIZARD  
BLOOM ENERGY, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

FRANK DE ROSA  
NEXTLIGHT RENEWABLE POWER, LLC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

FREEMAN S. HALL  
SOLAR ELECTRIC SOLUTIONS, LLC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

GENE THOMAS  
ECOLOGY ACTION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

GREGG FISHMAN  
ECOLOGY ACTION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

GREGORY S.G. KLATT  
DOUGLASS & LIDDELL  
EMAIL ONLY  
EMAIL ONLY, CA 00000

GUINNESS MCFADDEN  
EMAIL ONLY  
EMAIL ONLY, CA 00000

GWENNETH O'HARA  
CALIFORNIA POWER LAW GROUP  
EMAIL ONLY  
EMAIL ONLY, CA 00000

HARRY SINGH  
GOLDMAN SACHS & CO.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

HUGH YAO  
SOUTHERN CALIFORNIA GAS COMPANY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

JAMES B. WOODRUFF  
ATTORNEY AT LAW  
NEXTLIGHT RENEWABLE POWER, LLC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

JAMIE L. MAULDIN  
ADAMS BROADWELL JOSEPH & CARDOZO, PC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

JAN MCFAR  
EMAIL ONLY  
EMAIL ONLY, CA 00000

JAN MCFARLAND  
SONIC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

JAN PEPPER  
ELECTRIC DIV., MGR.  
SILICON VALLEY POWER  
EMAIL ONLY  
EMAIL ONLY, CA 00000

JANICE LIN  
 MANAGING PARTNER  
 STRATEGEN CONSULTING LLC  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

JASON YAN  
 PACIFIC GAS AND ELECTRIC COMPANY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

JAY CORRALES  
 TURNER REAL ESTATE  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

JIAN ZHANG  
 GRIDX, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

JOHN BARNES  
 PRESIDENT / CEO  
 SOLAR LAND PARTNERS, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

JOSH RICHMAN  
 BLOOM ENERGY CORPORATION  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

JULIANNE SPEARS  
 ORRICK HERRINGTON & SUTCLIFFE, LLP  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

KELLY GIDDENS  
 ORRICK HERINTON & SUTCLIFFE  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

KENNETH SAHM WHITE  
 CLEAN COALITION  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

KEVIN CHEN  
 TRINA SOLAR  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

LAUREN ROHDE  
 PACIFIC GAS AND ELECTRIC COMPANY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

LESLIE E. SHERMAN  
 ORRICK, HERRINGTON & SUTCLIFFE LLP  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

LON W. HOUSE, PH.D  
 WEC  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

LUKE SOULE  
 KOMODO ENTERPRISES, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MARCO LOPEZ  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MARCUS V. DA CUNHA  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MARGARET BRUCE  
 ECOLOGY ACTION  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MARJORIE OXSEN  
 CALPINE CORPORATION  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MARK CHEDIAK  
 ENERGY REPORTER  
 BLOOMBERG NEWS  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MARK FRAZEE  
 CITY OF ANAHEIM-PUBLIC UTILITIES DEPT.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MARK ROBERTS  
 DIR - PROGRAM DEVELOPMENT  
 SUNLIGHT PARTNERS, LLC  
 EMAIL ONLY  
 EMAIL ONLY, AZ 00000

MATT SUHR  
 CALPINE  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MEGAN COX  
 CALIFORNIA POWER LAW GROUP  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MELISSA P. MARTIN  
 STATESIDE ASSOCIATES  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MEREDITH CONNOLLY  
 NATURAL RESOURCES DEFENSE COUNCIL  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MICHAEL BASS  
 ESOLAR, INC.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MICHAEL DEANGELIS  
 SACRAMENTO MUNICIPAL UTILITY DISTRICT  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

MICHAEL WHEELER  
 RECURRENT ENERGY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

NEDRA YOUNG  
 WINTEC ENERGY, LTD  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

NEIL BLACK  
 CALIFORNIA BIOENERGY LLC  
 EMAIL ONLY  
 EMAIL ONLY, NY 00000

NICHOLAS WEBER  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

OBADIAH BARTHOLOMY  
 SACRAMENTO MUNICIPAL UTILITY DISTRICT  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

PAMELA BARBER  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

RANDY KELLER  
 DIRECTOR OF DEVELOPMENT  
 CALENERGY OPERATING CORPORATION  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

RICHARD SMITH  
 SAN FRANCISCO WATER, POWER & SEWER  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

ROB LONGNECKER  
 CLEAN COALITION  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

ROSS BUCKENHAM  
 CALIFORNIA BIOENERGY LLC  
 EMAIL ONLY  
 EMAIL ONLY, TX 00000

RYAN BERNARDO  
 BRAUN BLAISING MCLAUGHLIN, P.C.  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

RYAN HEIDARI  
 ENDIMENSIONS LLC  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000

SARA BIRMINGHAM  
 DIRECTOR - WESTERN POLICY  
 SOLAR ENERGY INDUSTRIES ASSOCIATION  
 EMAIL ONLY

EMAIL ONLY, CA 00000

SEAN GALLAGHER  
MANAGING DIRECTOR-GOV'T RELATIONS  
K ROAD POWER  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SEAN P. BEATTY  
DIRECTOR-WEST REGULATORY AFFAIRS  
GENON ENERGY, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SEPHRA NINOW  
CALIFORNIA CENTER FOR SUSTAINABLE ENERGY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SHANNON EDDY  
LARGE-SCALE SOLAR ASSOCIATION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SHIVANI BALLESTEROS  
SAN DIEGO GAS & ELECTRIC COMPANY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SIOBHAN DOHERTY  
FRV, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SNULLER PRICE  
ENERGY AND ENVIRONMENTAL ECONOMICS  
EMAIL ONLY  
EMAIL ONLY, CA 00000

STEPHEN SMITH  
SOLVIDA ENERGY GROUP  
EMAIL ONLY  
EMAIL ONLY, CA 00000

STEVEN KELLY  
INDEPENDENT ENERGY PRODUCERS ASSOCIATION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

STEVEN ZHU  
TRINA SOLAR  
EMAIL ONLY  
EMAIL ONLY, CA 00000

THADEUS B. CULLEY  
KEYES FOX & WIEDMAN LLP  
EMAIL ONLY  
EMAIL ONLY, CA 00000

TIMOTHY N. TUTT  
SACRAMENTO MUNICIPAL UTILITIES DISTRICT  
EMAIL ONLY  
EMAIL ONLY, CA 00000

TODD JOHANSEN  
DEVELOPMENT ANALYST  
RECURRENT ENERGY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

TONY BRAUN  
BRAUN BALISING MCLAUGHLIN PC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

TONY D. PASTORE  
EMAIL ONLY  
EMAIL ONLY, CA 00000

VALERIE J. WINN  
PACIFIC GAS & ELECTRIC COMPANY  
EMAIL ONLY  
EMAIL ONLY, CA 00000

VALERIE SEYMOUR  
POLICY ASSOCIATE  
CLEAN COALITION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

VENKAT SURAVARAPU  
IHS CERA  
EMAIL ONLY  
EMAIL ONLY, CA 00000

WILLIAM BUSCH  
EMAIL ONLY

MRW & ASSOCIATES, LLC  
EMAIL ONLY

EMAIL ONLY, CA 00000

EMAIL ONLY, CA 00000

CPUC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SILVERADO POWER LLC  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SPECTRUM ENERGY DEVELOPMENT INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000

CURTIS KEBLER  
SEMPRA GENERATION  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

DEREK DENNISTON  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

G. PATRICK STONER  
PROGRAM DIRECTOR  
LOCAL GOVERNMENT COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

IAN MCGOWAN  
MANAGER - REGULATORY AFFAIRS  
3DEGREES  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

JAMIE NAGEL  
ZGLOBAL, INC  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

JENNIFER BARNES  
NAVIGANT CONSULTING, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

JIM STACK, PH.D.  
RESOURCE PLANNER  
CITY OF PALO ALTO UTILITIES  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

JUDY PAU  
DAVIS WRIGHT TREMAINE LLP  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

LILY M. MITCHELL  
HANNA AND MORTON LLP  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

MARK STOUT  
MERIDIAN ENERGY USA, INC  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

MARTIN HOMEC  
REDWOOD RENEWABLES/CARE  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

MOHAN NIROULA  
CALIF DEPT OF WATER RESOURCES  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

NANCY RADER  
EXECUTIVE DIRECTOR  
CALIFORNIA WIND ENERGY ASSOCIATION  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000  
FOR: CALIFORNIA WIND ENERGY ASSOCIATION

PETER BLOOD  
COLUMBIA ENERGY PARTNERS, LLC  
EMAIL ONLY  
EMAIL ONLY, WA 00000-0000

POLLY SHAW  
SUNTECH AMERICA, INC.  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

RICHARD F. CHANDLER

RICHARD W. RAUSHENBUSH

BP SOLAR  
 EMAIL ONLY  
 EMAIL ONLY, MA 00000-0000

EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

ROBIN J. WALTHER  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

RYAN PLETKA  
 RENEWABLE ENERGY PROJECT MANAGER  
 BLACK & VEATCH  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

SHAUN HALVERSON  
 PACIFIC GAS AND ELECTRIC COMPANY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

SHERIDAN J. PAUKER  
 WILSON SONSINI GOODRICH & ROSATI  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

TED KO  
 ASSOCIATE EXECUTIVE DIRECTOR  
 CLEAN COALITION (FORMERLY FIT)  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

THOMAS HOBSON  
 GE ENERGY  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

DAVIS WRIGHT TREMAINE, LLC  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

COOL EARTH SOLAR  
 EMAIL ONLY  
 EMAIL ONLY, CA 00000-0000

JOHN B. HOWE  
 DIRECTOR OF PUBLIC AFFAIRS  
 NEW DIMENSION ENERGY COMPANY, LLC  
 221 CRESCENT ST., SUITE 103A  
 WALTHAM, MA 02453  
 FOR: NEW DIMENSION ENERGY COMPANY, LLC

JAMES MCMAHON  
 29 DANBURY ROAD  
 NASHUA, NH 03064

TRACY REID  
 FUELCELL ENERGY, INC.  
 3 GREAT PASTURE ROAD  
 DANBURY, CT 06810

KAREN KOCHONIES  
 MORGAN STANLEY  
 2000 WESTCHESTER AVE., 1ST FLOOR  
 PURCHASE, NY 10577

MORGAN HANSEN  
 MORGAN STANLEY - COMMODITIES  
 2000 WESTCHESTER AVE., 1ST FLOOR  
 PURCHASE, NY 10577

NICHOLE FABRI ZANDOLI  
 PRESIDENT  
 CLEAR ENERGY BROKERAGE & CONSULTING LLC  
 403 PARKSIDE AVENUE  
 BROOKLYN, NY 11226

ARIEL LAGER  
 CUSTOMIZED ENERGY SOLUTIONS  
 1528 WALNUT STREET  
 PHILADELPHIA, PA 19102

ERIKA SCHMITT  
 CUSTOMIZED ENERGY SOLUTIONS  
 1528 WALNUT STREET, 22ND FL.  
 PHILADELPHIA, PA 19102

CATHERINE M. KRUPKA  
 LS POWER ASSOCIATES, L.P.  
 1275 PENNSYLVANIA AVE., NW  
 WASHINGTON, DC 20004

ALEXANDRA KONIECZNY  
 SUTHERLAND ASHBILL & BRENNAN  
 1275 PENNSYLVANIA AVENUE, NW  
 WASHINGTON, DC 20004-2415



PAUL ACKERMAN  
 SENIOR COUNSEL  
 CONSTELLATION ENERGY RESOURCES, INC.  
 111 MARKET PLACE  
 BALTIMORE, MD 21202

MICHAEL E. CARBOY  
 SIGNAL HILL CAPITAL LLC  
 300 D. LOMBARD ST., STE. 1700  
 BALTIMORE, MD 21202-3243

TODD JAFFE  
 ENERGY BUSINESS BROKERS AND CONSULTANTS  
 3420 KEYSER ROAD  
 BALTIMORE, MD 21208

RONALD M. CERNIGLIA  
 DIRECTOR- NATIONAL ADVOCACY  
 DIRECT ENERGY SERVICES, LLC  
 7240 RYEHILL DR.  
 CARY, NC 27519-1570

ALRINE WILLIAMS  
 LEGAL COUNSEL  
 LIBERTY POWER HOLDINGS LLC  
 1901 W. CYPRESS CREEK ROAD, STE. 600  
 FORT LAUDERDALE, FL 33309

YANIRA M. GOMEZ  
 LIBERTY POWER CORP.  
 1901 W. CYPRESS CREEK RD., STE. 600  
 FORT LAUDERDALE, FL 33309

SAMARA M. RASSI  
 REGULATORY AFFAIRS ANALYST  
 FELLON-MCCORD & ASSOCIATES  
 10200 FOREST GREEN BLVD., STE. 601  
 LOUISVILLE, KY 40223-5183

CATHY S. WOOLLUMS  
 MIDAMERICAN ENERGY HOLDINGS COMPANY  
 106 EAST SECOND STREET  
 DAVENPORT, IA 52801

JASON ABIECUNAS  
 BLACK & BEATCH GLOBAL RENEWABLE ENERGY  
 RENEWABLE ENERGY CONSULTANT  
 11401 LAMAR  
 OVERLAND PARK, KS 66211

ERIC OSBORN  
 CALPINE POWER AMERICA-CA, LLC  
 717 TEXAS AVENUE, STE 100  
 HOUSTON, TX 77002  
 FOR: CALPINE POWER AMERICA - CA, LLC

MICHAEL D. HANSEN  
 CHAIRMAN  
 IGNITE SOLAR  
 811 DALLAS ST., SUITE 1422  
 HOUSTON, TX 77002

PETER MATHEY  
 PRESIDENT & CEO  
 IGNITE SOLAR  
 811 DALLAS STREET, STE. 1422  
 HOUSTON, TX 77002

ED CHIANG  
 ELEMENT MARKETS, LLC  
 3555 TIMMONS LANE, STE. 900  
 HOUSTON, TX 77027-6453

COMMERCE ENERGY, INC.  
 5251 WESTHEIMER RD., STE. 1000  
 HOUSTON, TX 77056-5414

EDWIN DEARMAN  
 GEXA ENERGY CALIFORNIA , LLC  
 20455 STATE HIGHWAY 249, STE. 200  
 HOUSTON, TX 77070

JONATHAN JACOBS  
 PA CONSULTING GROUP  
 1700 LINCOLN ST STE 4600  
 DENVER, CO 80203-4509

KEVIN J. SIMONSEN  
 ENERGY MANAGEMENT SERVICES  
 1537 FLORIDA RD., STE. 108  
 DURANGO, CO 81301-5792

JEFF GULDNER  
 ARIZONA PUBLIC SERVICE COMPANY  
 400 N 5TH STREET, MS 9040  
 PHOENIX, AZ 85004

JENINE SCHENK

MARK ETHERTON

APS ENERGY SERVICES  
400 E. VAN BUREN STREET, SUITE 750  
PHOENIX, AZ 85004

PDS CONSULTING  
3231 S. COUNTRY CLUB WAY, STE. 103  
TEMPE, AZ 85283

TIMOTHY CASTILLE  
LANDS ENERGY CONSULTING, INC.  
1050 CRACKER BARREL CIRCLE  
MESQUITE, NV 89034-1017

CHRISTOPHER A. HILEN  
NV ENERGY  
6100 NEIL ROAD, MS A35  
RENO, NV 89511

ELENA MELLO  
SIERRA PACIFIC POWER COMPANY  
6100 NEIL ROAD  
RENO, NV 89520

TREVOR DILLARD  
RATE REGULATORY RELATIONS  
SIERRA PACIFIC POWER COMPANY  
6100 NEAL ROAD, MS S4A50 / PO BOX 10100  
RENO, NV 89520-0026

JOE GRECO  
TERRA-GEN POWER LLC  
9590 PROTOTYPE COURT, SUITE 200  
RENO, NV 89521-5916

BRYAN SCHWEICKERT  
ENVIRONMENTAL SUPERVISOR  
LOS ANGELES DEPT. OF WATER & POWER  
111 N. HOPE ST.  
LOS ANGELES, CA 90012

RANDY HOWARD  
POWER ENGINEERING MGR.  
LOS ANGELES DEPT. OF WATER & POWER  
111 N HOPE STREET, STE. 921  
LOS ANGELES, CA 90012

SARAH FRIEDMAN  
SIERRA CLUB  
714 W. OLYMPIC BLVD., STE. 1000  
LOS ANGELES, CA 90015

JEFF NEWMAN  
TRANSPORTATION AND HOUSING AGENCY  
7080 HOLLYWOOD BLVD., SUITE 900  
LOS ANGELES, CA 90028

AL ROSEN  
ABSOLUTELY SOLAR INC.  
PO BOX 491878  
LOS ANGELES, CA 90049-8878

LEILANI JOHNSON KOWAL  
LOS ANGELES DEPT. OF WATER AND POWER  
PO BOX 51111, ROOM 1541  
LOS ANGELES, CA 90051-0100

RANDALL W. KEEN  
ATTORNEY AT LAW  
MANATT PHELPS & PHILLIPS, LLP  
11355 WEST OLYMPIC BLVD.  
LOS ANGELES, CA 90064

CARL STEEN  
FULBRIGHT & JAWORSKI L.L.P.  
555 SOUTH FLOWER STREET, 41ST FLOOR  
LOS ANGELES, CA 90071

FRED G. YANNEY  
FULBRIGHT & JAWORSKI L.L.P.  
555 SOUTH FLOWER STREET, 41ST FLOOR  
LOS ANGELES, CA 90071-2571

ANGELINA GALITEVA  
FOUNDER, CHAIR OF THE BOARD  
RENEWABLES 100 POLICY INSTITUTE  
35316 MULHOLLAND HWY  
MALIBU, CA 90265

3 PHASES RENEWABLES LLC  
2100 SEPULVEDA BLVD, SUITE 37  
MANHATTAN BEACH, CA 90266

HARVEY M. EDER  
PUBLIC SOLAR POWER COALITION  
1218 12TH STREET, NO. 25  
SANTA MONICA, CA 90401

GURCHARAN BAWA  
PASADENA WATER AND POWER  
150 S. LOS ROBLES, SUITE 200  
PASADENA, CA 91101

CHARLES CHANG  
ENGINEER-ENVIRONMENTAL PROGRAMS  
PASADENA WATER & POWER  
85 EAST STATE STREET  
PASADENA, CA 91105

VALERIE PUFFER  
POWER CONTRACTS MANAGER  
GLENDALE WATER & POWER  
700 N. BRAND BLVD., STE. 590  
GLENDALE, CA 91203

JACK MCNAMARA  
ATTORNEY AT LAW  
MACK ENERGY COMPANY  
PO BOX 1380  
AGOURA HILLS, CA 91376-1380

BRUNO JEIDER  
BURANK WATER & POWER  
164 W. MAGNOLIA BLVD.  
BURBANK, CA 91502

YAREK LEHR  
AZUSA LIGHT & WATER  
729 N. AZUSA AVENUE  
AZUSA, CA 91702

KENYON HOLMES  
TRANE  
17748 ROWLAND STREET  
CITY OF INDUSTRY, CA 91748

CASE ADMINISTRATION  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVENUE  
ROSEMEAD, CA 91770

CURT RONEY  
SOUTHERN CALIFORNIA EDISON  
2244 WALNUT GROVE, G01-C  
ROSEMEAD, CA 91770

GEORGE WILTSEE  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVENUE  
ROSEMEAD, CA 91770

JANICE WANG  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVE.  
ROSEMEAD, CA 91770

JONI A. TEMPLETON  
ATTORNEY AT LAW  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVENUE, PO BOX 800  
ROSEMEAD, CA 91770

LAURA I. GENAO  
SOUTHERN CALIFORNIA EDISON COMPANY  
PO BOX 800, 2244 WALNUT GROVE AVENUE  
ROSEMEAD, CA 91770

MELISSA A. HOVSEPIAN  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVE. / PO BOX 800  
ROSEMEAD, CA 91770

REBECCA MEIERS-DE PASTINO  
SR. ATTORNEY  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVE.  
ROSEMEAD, CA 91770

JENNIFER TSAO SHIGEKAWA  
SR. ATTORNEY, CUSTOMER & TARIFF LAW  
SOUTHERN CALIFORNIA EDISON COMPANY  
2244 WALNUT GROVE AVE. / PO BOX 800  
ROSEMEAD, CA 91770-3714

NGUYEN QUAN  
MGR - REGULATORY AFFAIRS  
GOLDEN STATE WATER CO. - ELECTRIC OP.  
630 EAST FOOTHILL BOULEVARD  
SAN DIMAS, CA 91773

SOCAL WATER/BEAR VALLEY ELECTRIC  
630 EAST FOOTHILL BLVD.  
SAN DIMAS, CA 91773

CHAD CHAHBAZI  
BAP POWER CORPORATION D/B/A CENERGY  
3176 LIONSHEAD AVENUE, STE. 1  
CARLSBAD, CA 92010-4708

ROBERT J. GILLESKIE

ARLEN BARKSDALE, PHD

LIGHTPOINT CONSULTING SERVICES  
2570 PINWOOD STREET  
DEL MAR, CA 92014

CEO / CTO  
DESMON ENERGY, LLC  
1538 ENCINITAS BLVD.  
ENCINITAS, CA 92024

HAROLD M. ROMANOWITZ  
OAK CREEK ENERGY SYSTEMS, INC.  
150 LA TERRAZA BLVD.  
ESCONDIDO, CA 92025

JEFF COX  
1557 MANDEVILLE PLACE  
ESCONDIDO, CA 92029

GEOREG GISEL  
INDEPENDENT ENERGY SOLUTIONS, INC.  
1090 JOSHUA WAY  
VISTA, CA 92081

CHRISTOPHER SUMMERS  
SAN DIEGO GAS & ELECTRIC COMPANY  
8326 CENTURY PARK COURT  
SAN DIEGO, CA 92101

GREG BASS  
NOBLE AMERICAS ENERGY SOLUTIONS LLC  
401 WEST A STREET, SUITE 500  
SAN DIEGO, CA 92101-3017

SHAWN BAILEY  
DIRECTOR - PLANNING & ANALYSIS  
SEMPRA US GAS AND POWER  
101 ASH STREET  
SAN DIEGO, CA 92101-3017

STEVEN C. NELSON  
ATTORNEY  
SEMPRA ENERGY  
101 ASH STREET HQ-12B  
SAN DIEGO, CA 92101-3017

THEODORE E. ROBERTS  
SEMPRA GENERATION / SEMPra BROADBAND  
101 ASH STREET, HQ 12B  
SAN DIEGO, CA 92101-3017

NOBLE AMERICAS ENERGY SOLUTIONS LLC  
101 ASH STREET, HQ09  
SAN DIEGO, CA 92101-3017

TERRY FARRELLY  
269 G AVENUE  
CORONADO, CA 92118

MARCIE MILNER  
SHELL ENERGY NORTH AMERICA  
4445 EASTGATE MALL, SUITE 100  
SAN DIEGO, CA 92121

SARAH TOMEC  
SR. ADVISOR, REGULATORY AFFAIRS WEST  
CAPITAL POWER CORPORATION  
9255 TOWNE CENTRE DRIVE, STE. 900  
SAN DIEGO, CA 92121

JENNIFER PIERCE  
SAN DIEGO GAS & ELECTRIC COMPANY  
8330 CENTURY PARK CT  
SAN DIEGO, CA 92123

DESPINA NIEHAUS  
SAN DIEGO GAS AND ELECTRIC COMPANY  
8330 CENTURY PARK COURT, CP32H  
SAN DIEGO, CA 92123-1530

CENTRAL FILES  
SDG&E AND SOCALGAS  
8330 CENTURY PARK COURT, CP31-E  
SAN DIEGO, CA 92123-1550

SCOTT HARDING  
ENERGY RESOURCE PLANNER, SR.  
IMPERIAL IRRIGATION DISTRICT  
333 E. BARIONI BLVD.  
IMPERIAL, CA 92251

FRED W. NOBLE  
PRESIDENT  
WINTEC ENERGY, LTD  
1090 N. PALM CANYON DR., SUITE A  
PALM SPRINGS, CA 92260

JIM FERGUSON  
FERGUSON LAW FIRM  
73101 HIGHWAY 111, STE. 1  
PALM DESERT, CA 92260

ROGER KROPKE  
 BEAR VALLEY ELECTRIC SERVICE  
 PO BOX 1547  
 BIG BEAR LAKE, CA 92315  
 FOR: BEAR VALLEY ELECTRIC SERVICE

PETER T. PEARSON  
 ENERGY SUPPLY SPECIALIST  
 BEAR VALLEY ELECTRIC SERVICE  
 42020 GARSTIN DRIVE, PO BOX 1547  
 BIG BEAR LAKE, CA 92315-1547

CHARLES J. BLACK  
 RIVERSIDE PUBLIC UTILITIES  
 3435 14TH STREET  
 RIVERSIDE, CA 92501

JOHN DEWEY  
 THE DEWEY GROUP  
 PO BOX 12913  
 NEWPORT BEACH, CA 92658-5079

CARRIE THOMPSON  
 CITY OF ANAHEIM  
 201 S. ANAHEIM BLVD., STE. 802  
 ANAHEIM, CA 92805

CARRIE TOMPSON  
 CITY OF ANAHEIM  
 201 S. ANAHEIM BLVD., STE. 802  
 ANAHEIM, CA 92805

JANIS LEHMAN  
 CHIEF RISK OFFICER  
 CITY OF ANAHEIM-PUBLIC UTILITIES DEPT.  
 201 S. ANAHEIM BLVD., STE.802  
 ANAHEIM, CA 92805

MANDIP KAUR SAMRA  
 INTEGRATED RESOURCES PLANNER  
 CITY OF ANAHEIM-PUBLIC UTILITIES DEPT.  
 201 S. ANAHEIM BLVD., SUITE 802  
 ANAHEIM, CA 92805

PETER MORITZBURKE  
 3 ECHO AVENUE  
 CORTE MADERA, CA 92925

JEFF HIRSCH  
 JAMES J. HIRSCH & ASSOCIATES  
 12185 PRESILLA ROAD  
 CAMARILLO, CA 93012-9243

CURTIS SEYMOUR  
 SR. MANAGER - GOVERNMENT AFFAIRS  
 SUNEDISON LLC  
 600 CLIPPER DR.  
 BELMONT, CA 94002

EVELYN KAHL  
 ATTORNEY AT LAW  
 ALCANTAR & KAHL, LLP  
 33 NEW MONTGOMERY STREET, SUITE 1850  
 SAN FRANCISCO, CA 94015  
 FOR: OCCIDENTAL POWER SERVICES,  
 INC./ENERGY PRODUCERS AND USERS  
 COALITION.

ELIZABETH KLEBANER  
 ADAMS BROADWELL JOSEPH & CARDOZO  
 601 GATEWAY BLVD., STE. 1000  
 SOUTH SAN FRANCISCO, CA 94080  
 FOR: INTERNATIONAL BROTHERHOOD OF  
 ELECTRICAL WORKERS LOCAL 569

SOLAR SEMICONDUCTOR INC.  
 1292 KIFER ROAD, SUITE 808  
 SUNNYVALE, CA 94086

NOEL OBIORA  
 CALIF PUBLIC UTILITIES COMMISSION  
 LEGAL DIVISION  
 ROOM 5121  
 505 VAN NESS AVENUE  
 SAN FRANCISCO, CA 94102-3214

AUSTIN M. YANG  
 CITY AND COUNTY OF SAN FRANCISCO  
 OFFICE OF THE CITY ATTORNEY, RM. 234  
 1 DR. CARLTON B. GODDLETT PLACE  
 SAN FRANCISCO, CA 94102-4682

DAN ADLER  
 DIRECTOR, TECH AND POLICY DEVELOPMENT

MICHAEL A. HYAMS  
 POWER ENTERPRISE-REGULATORY AFFAIRS

CALIFORNIA CLEAN ENERGY FUND  
5 THIRD STREET, SUITE 1125  
SAN FRANCISCO, CA 94103

SAN FRANCISCO PUBLIC UTILITIES COMM  
1155 MARKET ST., 4TH FLOOR  
SAN FRANCISCO, CA 94103

SUSAN PRESTON  
CALCEF CLEAN ENERGY ANGEL FUND  
5 THIRD STREET, STE. 1125  
SAN FRANCISCO, CA 94103

THERESA BURKE  
SAN FRANCISCO PUC  
1155 MARKET STREET, 4TH FLOOR  
SAN FRANCISCO, CA 94103

ANDRE DEVILBISS  
ASSOCIATE, DEVELOPMENT  
RECURRENT ENERGY  
300 CALIFORNIA STREET, 8TH FLOOR  
SAN FRANCISCO, CA 94104

HANS ISERN  
VP - ENGINEERING  
SILVERADO POWER LLC  
44 MONTGOMERY STREET, SUITE 3065  
SAN FRANCISCO, CA 94104

LUKE DUNNINGTON  
ASSOCIATE, DEVELOPMENT  
RECURRENT ENERGY  
300 CALIFORNIA STREET, 8TH FL  
SAN FRANCISCO, CA 94104

MARCEL HAWIGER  
ENERGY ATTY  
THE UTILITY REFORM NETWORK  
115 SANSOME STREET, SUITE 900  
SAN FRANCISCO, CA 94104

PETER MILLER  
NATURAL RESOURCES DEFENSE COUNCIL  
111 SUTTER STREET, 20TH FLOOR  
SAN FRANCISCO, CA 94104

TANDY MCMANNES  
ABENGOA SOLAR, INC.  
235 PINE STREET, STE. 1800  
SAN FRANCISCO, CA 94104  
FOR: ABENGOA SOLAR, INC.

ARNO HARRIS  
RECURRENT ENERGY, INC.  
300 CALIFORNIA ST., 8TH FL.  
SAN FRANCISCO, CA 94104-1416

NOAH LONG  
NATURAL RESOURCES DEFENSE COUNCIL  
111 SUTTER ST., 20TH FLOOR  
SAN FRANCISCO, CA 94104-4540  
FOR: NRDC

ANUPAMA VEGE  
FIRST WIND  
2 SHAW ALLEY, SUITE 500  
SAN FRANCISCO, CA 94105

BRUCE PERLSTEIN, PH.D.  
NAVIGANT CONSULTING, INC.  
SPEAR STREET TOWER  
ONE MARKET ST., STE. 1200  
SAN FRANCISCO, CA 94105

CARLOS M. ABREU  
PACIFIC GAS & ELECTRIC COMPANY  
RENEWABLE TRANSACTIONS DEPT.  
77 BEALE ST., RM. 2597F  
SAN FRANCISCO, CA 94105

CHARLES R. MIDDLEKAUFF  
PACIFIC GAS AND ELECTRIC COMPANY  
LAW DEPT.  
77 BEALE STREET, B30A / PO BOX 7442  
SAN FRANCISCO, CA 94105

ED LUCHA  
CASE COORDINATOR  
PACIFIC GAS AND ELECTRIC COMPANY  
77 BEALE STREET, MC B9A, ROOM 991  
SAN FRANCISCO, CA 94105

ERICA BRAND  
THE NATURE CONSERVANCY CALIFORNIA  
201 MISSION STREET, 4TH FLOOR  
SAN FRANCISCO, CA 94105  
FOR: THE NATURE CONSERVANCY

JOHN PAPPAS  
UTILITY ELECTRIC PORTFOLIO MANAGEMENT

KAREN TERRANOVA  
ALCANTAR & KAHL, LLP

PACIFIC GAS AND ELECTRIC COMPANY  
245 MARKET STREET, MC N12G  
SAN FRANCISCO, CA 94105

33 NEW MONTGOMERY STREET, SUITE 1850  
SAN FRANCISCO, CA 94105

MARIA VANKO  
LAW DEPARTMENT  
PACIFIC GAS & ELECTRIC COMPANY  
77 BEALE ST., MCB30A  
SAN FRANCISCO, CA 94105

MICHAEL P. GINSBURG  
ATTORNEY AT LAW  
ORRICK, HERRINGTON & SUTCLIFFE LLP  
405 HOWARD STREET  
SAN FRANCISCO, CA 94105

PETER W. HANSCHEN  
ATTORNEY AT LAW  
MORRISON & FOERSTER, LLP  
425 MARKET STREET  
SAN FRANCISCO, CA 94105

SEEMA SRINIVASAN  
ALCANTAR & KAHL, LLP  
33 NEW MONTGOMERY STREET, SUITE 1850  
SAN FRANCISCO, CA 94105

CORY M. MASON  
ATTORNEY  
PACIFIC GAS AND ELECTRIC COMPANY  
77 BEALE STREET, MC B30A  
SAN FRANCISCO, CA 94105-1814

NIELS KJELLUND  
PACIFIC GAS AND ELECTRIC COMPANY  
77 BEALE STREET, MAIL CODE B9A  
SAN FRANCISCO, CA 94105-1814

ADAM BROWNING  
THE VOTE SOLAR INITIATIVE  
300 BRANNAN STREET, SUITE 609  
SAN FRANCISCO, CA 94107

SUSANNAH CHURCHILL  
ADVOCATE  
THE VOTE SOLAR INITIATIVE  
300 BRANNAN ST., SUITE 609  
SAN FRANCISCO, CA 94107

BRIAN ORION  
LAWYERS FOR CLEAN ENERGY  
1156 FLORIDA STREET  
SAN FRANCISCO, CA 94110

ASHIANNA T. ESMAIL  
LATHAM & WATKINS  
505 MONTGOMERY STREET, STE. 2000  
SAN FRANCISCO, CA 94111

JACK STODDARD  
MANATT PHELPS & PHILLIPS, LLP  
ONE EMBARCADERO CENTER, 30TH FL.  
SANFRANCISCO, CA 94111

JANINE L. SCANCARELLI  
ATTORNEY AT LAW  
CROWELL & MORING LLP  
275 BATTERY STREET, 23RD FLOOR  
SAN FRANCISCO, CA 94111

JARED W. JOHNSON  
LATHAM & WATKINS, LLP  
505 MONTGOMERY ST., SUITE 2000  
SAN FRANCISCO, CA 94111  
FOR: TRANSWEST EXPRESS, LLC/TRANSALTA  
CORP.

JOE PAUL  
NATURENER USA  
394 PACIFIC AVENUE, STE. 300  
SAN FRANCISCO, CA 94111

JONATHAN MALTA-WEINGARD  
NATURENER USA, INC.  
394 PACIFIC AVENUE, STE. 300  
SAN FRANCISCO, CA 94111

MARK FUMIA  
DAVIS WRIGHT TREMAINE LLP  
505 MONTGOMERY STREET, SUITE 800  
SAN FRANCISCO, CA 94111  
FOR: NORTHWEST ENERGY SYSTEMS CO.

RAFI HASSAN

SARAH BARKER-BALL

SUSQUEHANNA FINANCIAL GROUP, LLLP  
101 CALIFORNIA STREET, SUITE 3250  
SAN FRANCISCO, CA 94111

BINGHAM MCCUTCHEM LLP  
3 EMBARCADERO CENTER  
SAN FRANCISCO, CA 94111

TARA S. KAUSHIK  
ATTORNEY  
MANATT, PHELPS & PHILLIPS, LLP  
ONE EMBARCADERO CENTER, 30TH FLOOR  
SAN FRANCISCO, CA 94111

MONICA SCHWEBS  
BINGHAM MCCUTCHEM LLP  
THREE EMBARCADERO CENTER  
SAN FRANCISCO, CA 94111-4067  
FOR: SOLAR RESERVE, LLC

KATHERINE RYZHAYA  
VP  
EVOLUTION MARKETS INC.  
101 CALIFORNIA ST., STE. 2750  
SAN FRANCISCO, CA 94111-5802  
FOR: EVOLUTION MARKETS INC.

LISA A. COTTLE  
ATTORNEY AT LAW  
WINSTON & STRAWN LLP  
101 CALIFORNIA STREET, 39TH FLOOR  
SAN FRANCISCO, CA 94111-5802

NOELLE R. FORMOSA  
WINSTON & STRAWN, LLP  
101 CALIFORNIA STREET, 39TH FLOOR  
SAN FRANCISCO, CA 94111-5894

THOMAS W. SOLOMON  
ATTORNEY AT LAW  
WINSTON & STRAWN LLP  
101 CALIFORNIA STREET, 39TH FLOOR  
SAN FRANCISCO, CA 94111-5894

HILARY CORRIGAN  
CALIFORNIA ENERGY MARKETS  
425 DIVISADERO ST. SUITE 303  
SAN FRANCISCO, CA 94117-2242

LISA WEINZIMER  
PLATTS MCGRAW-HILL  
695 NINTH AVENUE, NO. 2  
SAN FRANCISCO, CA 94118

ALYSSA T. KOO  
PACIFIC GAS AND ELECTRIC COMPANY  
77 BEALE STREET, B30A / PO BOX 7442  
SAN FRANCISCO, CA 94120

REGULATORY FILE ROOM  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 7442  
SAN FRANCISCO, CA 94120

OLIVER N. MYERS  
LAW OFFICES OF SARA STECK MYERS  
122 - 28TH AVENUE  
SAN FRANCISCO, CA 94121

ANTON A. CHIONO  
POLICY ANALYST  
THE PACIFIC FOREST TRUST  
1001-A OREILLY AVENUE  
SAN FRANCISCO, CA 94129

ROBIN QUARRIER  
COUNSEL  
CENTER FOR RESOURCE SOLUTIONS  
1012 TORNEY AVENUE, 2ND FL.  
SAN FRANCISCO, CA 94129

BRIAN K. CHERRY  
PACIFIC GAS AND ELECTRIC COMPANY  
77N BEALE ST., PO BOX 770000, MC B10C  
SAN FRANCISCO, CA 94177

BROOKE A. REILLY  
PACIFIC GAS & ELECTRIC COMPANY  
245 MARKET STREET, RM. 1251, MC N12G  
SAN FRANCISCO, CA 94177

MAGGIE CHAN  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000, MAIL CODE B9A  
SAN FRANCISCO, CA 94177

MARK HUFFMAN  
ATTORNEY AT LAW  
PACIFIC GAS AND ELECTRIC COMPANY

MIYUKI IWAHASHI  
PACIFIC GAS & ELECTRIC COMPANY  
PO BOX 770000



PO BOX 770000, MC B30A  
SAN FRANCISCO, CA 94177

SAN FRANCISCO, CA 94177

SAIPRIYA CHOUDHURI  
PACIFIC GAS & ELECTRIC COMPANY  
PO BOX 770000, MAIL CODE B9A  
SAN FRANCISCO, CA 94177

KAREN KHAMOU  
PACIFIC GAS AND ELECTRIC COMPANY  
PO BOX 770000, MC B9A  
SAN FRANCISCO, CA 94177-0001

CHRIS KING  
CHIEF REGULATORY OFFICER  
EMETER CORPORATION  
2215 BRIDGEPOINTE PARKWAY, STE. 300  
SAN MATEO, CA 94404

BETH VAUGHAN  
CALIFORNIA COGENERATION COUNCIL  
4391 NORTH MARSH ELDER CT.  
CONCORD, CA 94521

TONY CHEN  
SR. MANGER, BUSINESS DEVEL.  
COOL EARTH SOLAR  
4659 LAS POSITAS RD., STE. 94551  
LIVERMORE, CA 94551

ANDREW J. VAN HORN  
VAN HORN CONSULTING  
12 LIND COURT  
ORINDA, CA 94563

AVIS KOWALEWSKI  
CALPINE CORPORATION  
4160 DUBLIN BLVD., SUITE 100  
DUBLIN, CA 94568  
FOR: CALPINEPOWERAMERICA-CA,LLC

JILL VAN DALEN  
CALPINE CORPORATION  
4160 DUBLIN BLVD., STE. 100  
DUBLIN, CA 94568

MATTHEW BARMACK  
CALPINE CORPORATION  
4160 DUBLIN BLVD., STE. 100  
DUBLIN, CA 94568

JENNIFER CHAMBERLIN  
LS POWER DEVELOPMENT, LLC  
5000 HOPYARD ROAD, SUITE 480  
PLEASANTON, CA 94588

TIM MASON  
BLACK & VEATCH CORP.  
2999 OAK ROAD, SUITE 490  
WALNUT CREEK, CA 94597

ALEX KANG  
ITRON, INC.  
1111 BROADWAY, STE. 1800  
OAKLAND, CA 94607

RAMONA GONZALEZ  
EAST BAY MUNICIPAL UTILITY DISTRICT  
375 ELEVENTH STREET, M/S NO. 205  
OAKLAND, CA 94607

BARRY H. EPSTEIN  
FITZGERALD, ABBOTT & BEARDSLEY, LLP  
1221 BROADWAY, 21ST FLOOR  
OAKLAND, CA 94612

ERICA SCHROEDER  
KEYES FOX & WIEDMAN, LLP  
436 14TH ST., STE. 1305  
OAKLAND, CA 94612

TIM LINDL  
KEYES FOX & WIEDMAN LLP  
436 14TH STREET, STE. 1305  
OAKLAND, CA 94612

MATTHEW SCHAFER  
NEXTERA ENERGY RESOURCES  
505 14TH STREET, SUITE 300  
OAKLAND, CA 94612-1935

NELLIE TONG  
SENIOR ANALYST  
KEMA, INC.  
155 GRAND AVE., STE. 500  
OAKLAND, CA 94612-3747

RAMESH RAMCHANDANI  
 COMMERCIAL ENERGY  
 7677 OAKPORT ST., STE. 525  
 OAKLAND, CA 94621

RON PERRY  
 CEO  
 COMMERCIAL ENERGY  
 7677 OAKPORT ST., STE. 525  
 OAKLAND, CA 94621

CYNTHIA WOOTEN  
 LUMENX CONSULTING, INC.  
 1126 DELAWARE STREET  
 BERKELEY, CA 94702

REED V. SCHMIDT  
 BARTLE WELLS ASSOCIATES  
 1889 ALCATRAZ AVENUE  
 BERKELEY, CA 94703-2714

ANDY KATZ  
 SIERRA CLUB CALIFORNIA  
 2150 ALLSTON WAY, STE. 400  
 BERKELEY, CA 94704

JOSHUA BAR-LEV  
 BAR-LEV ASSOCIATES  
 84 GYPSY LANE  
 BERKELEY, CA 94705

LINDA AGERTER  
 LARGE-SCALE SOLAR ASSOCIATION  
 51 PARKSIDE DRIVE  
 BERKELEY, CA 94705

GERALD T. ROBINSON  
 LAWRENCE BERKLEY NATIONAL LABS  
 ONE CYCLOTRON ROAD  
 BERKLEY, CA 94720

ED SMELOFF  
 SENIOR MANAGER  
 SUNPOWER CORPORATION  
 1414 HARBOUR WAY SOUTH  
 RICHMOND, CA 94804

JEREMY WAEN  
 REGULATORY ANALYST  
 MARIN ENERGY AUTHORITY  
 781 LINCOLN AVENUE, STE. 320  
 SAN RAFAEL, CA 94901

LYNN M. ALEXANDER  
 LMA CONSULTING  
 129 REDWOOD AVENUE  
 CORTE MADERA, CA 94925

TOM FAUST  
 REDWOOD RENEWABLES LLC  
 6 ENDEAVOR DRIVE  
 CORTE MADERA, CA 94925

PAUL FENN  
 LOCAL POWER  
 22888 HIGHWAY 1 / PO BOX 744  
 MARSHALL, CA 94940-9701

ANDERS GLADER  
 SVP, ORIGINATION  
 IBERDROLA RENEWABLES  
 114 MORNING SUN AVENUE  
 MILL VALLEY, CA 94941

JOHN NIMMONS  
 COUNSEL  
 JOHN NIMMONS & ASSOCIATES, INC.  
 175 ELINOR AVE., STE. G  
 MILL VALLEY, CA 94941  
 FOR: RECURRENT ENERGY

TIM ROSENFELD  
 MARIN ENERGY MANAGEMENT TEAM  
 131 CAMINO ALTO, SUITE D  
 MILL VALLEY, CA 94941

JOHN M. SPILMAN  
 LAW OFFICE OF JOHN M. SPILMAN  
 22 FAIRWAY DRIVE  
 MILL VALLEY, CA 94941-1309

EDWARD A. MAINLAND  
 CO-CHAIR, ENERGY-CLIMATE COMMITTEE  
 CNRCC SIERRA CLUB CALIFORNIA  
 1017 BEL MARIN KEYS BLVD.  
 NOVATO, CA 94949

KEITH WHITE  
 312 KELLER ST

BARBARA GEORGE  
 WOMEN'S ENERGY MATTERS

PETALUMA, CA 94952

PO BOX 548  
FAIRFAX, CA 94978-0548

ERIC CHERNISS  
SOLARGEN ENERGY  
20400 STEVENS CREEK BLVD, SUITE 700  
CUPERTINO, CA 95014

SHANI KLEINHAUS  
SANTA CLARA VALLEY AUDUBON SOCIETY  
22221 MCLELLAN ROAD  
CUPERTINO, CA 95014

JERRY MIX  
PRESIDENT  
WATTSTOPPER  
2800 DE LA CRUZ BLVD.  
SANTA CLARA, CA 95050

MARY TUCKER  
MARY TUCKER CONSULTING  
359 N. 5TH STREET  
SAN JOSE, CA 95112

C. SUSIE BERLIN  
ATTORNEY AT LAW  
MC CARTHY & BERLIN, LLP  
100 W SAN FERNANDO ST., STE 501  
SAN JOSE, CA 95113

THOMAS J. VICTORINE  
SAN JOSE WATER COMPANY  
1221 S. BASCOM AVENUE  
SAN JOSE, CA 95128

MIKE JENSEN  
MERCED IRRIGATION DISTRICT  
PO BOX 2288  
MERCED, CA 95344-0288

DAVID OLIVARES  
ELECTRIC RESOURCE  
MODESTO IRRIGATION DISTRICT  
PO BOX 4060  
MODESTO, CA 95352

JOY A. WARREN  
REGULATORY ADMINISTRATOR  
MODESTO IRRIGATION DISTRICT  
1231 11TH STREET  
MODESTO, CA 95354

LINDA FISCHER  
LEGAL DEPARTMENT  
MODESTO IRRIGATION DISTRICT  
1231 11TH STREET  
MODESTO, CA 95354

NORMAN ROSS BURGESS  
PO BOX 200  
ZENIA, CA 95595

DOUGLAS M. GRANDY, P.E.  
CALIFORNIA ONSITE GENERATION  
DG TECHNOLOGIES  
1220 MACAULAY CIRCLE  
CARMICHAEL, CA 95608

MARK BERMAN  
DAVIS ENERGY GROUP  
123 C STREET  
DAVIS, CA 95616

RICHARD MCCANN  
M.CUBED  
2655 PORTAGE BAY ROAD, SUITE 3  
DAVIS, CA 95616

TOBIN RICHARDSON  
RICHARDSON GROUP  
1416 VIGO COURT  
DAVIS, CA 95618

DAN AUSTIN  
ZGLOBAL, INC.  
604 SUTTER STREET, STE. 250  
FOLSOM, CA 95630

LEGAL AND REGULATORY DEPARTMENT  
CALIFORNIA ISO  
151 BLUE RAVINE ROAD  
FOLSOM, CA 95630

SAEED FARROKHPAY  
FEDERAL ENERGY REGULATORY COMMISSION  
1835 IRON POINT RD., SUITE 160  
FOLSOM, CA 95630-8771

C. RICHARD WYLIE  
BEUTLER CORPORATION  
4700 LANG AVE.  
MCCLELLAN, CA 95652

DAVID BRANCHCOMB  
BRANCHCOMB ASSOCIATES, LLC  
9360 OAKTREE LANE  
ORANGEVILLE, CA 95662

BRIAN THEAKER  
NRG ENERGY  
3161 KEN DEREK LANE  
PLACERVILLE, CA 95667

RICK A. LIND  
SIERRA ECOSYSTEM ASSOCIATES  
PO BOX 2260  
PLACERVILLE, CA 95667

ART RIVERA  
RENEWABLE TECHCOM  
10923 PROGRESS COURT, NO. 2011  
RANCHO CORDOVA, CA 95670

KENNY SWAIN  
NAVIGANT CONSULTING  
3100 ZINFANDEL DRIVE, SUITE 600  
RANCHO CORDOVA, CA 95670

PAUL D. MAXWELL  
NAVIGANT CONSULTING, INC.  
3100 ZINFANDEL DRIVE, SUITE 600  
RANCHO CORDOVA, CA 95670-6078

DANIEL KIM  
WESTLANDS SOLAR PARK  
PO BOX 582844  
ELK GROVE, CA 95757

JACQUELINE M. DEROSA  
DIRECTOR OF REGULATORY AFFAIRS - CA  
CUSTOMIZED ENERGY SOLUTIONS  
101 PARKSHORE DRIVE SUITE 100  
FOLSOM, CA 95762

MARGARET MILLER  
DIR - REGULATORY AFFAIRS  
BROOKFIELD ENERGY MARKETING  
513 SAN MARCO PLACE  
EL DORADO HILLS, CA 95762

TOM POMALES  
CALIFORNIA AIR RESOURCES BOARD  
1001 I STREET  
SACRAMENTO, CA 95812

ALLISON C. SMITH  
ATTORNEY  
STOEL RIVES LLP  
500 CAPITOL MALL, SUITE 1600  
SACRAMENTO, CA 95814

ANTHONY BRUNELLO  
CALIFORNIA STRATEGIES LLC  
980 NINTH STREET, SUITE 2000  
SACRAMENTO, CA 95814

AUTUMN BERNSTEIN  
CLIMATE PLAN  
717 K STREET, SUITE 330  
SACRAMENTO, CA 95814

CURT BARRY  
SENIOR WRITER  
CLEAN ENERGY REPORT  
717 K STREET, SUITE 503  
SACRAMENTO, CA 95814

DOROTHY ROTHROCK  
VP - GOVERNMENT RELATIONS  
CALIFORNIA MANUFACTURERS & TECHNO. ASSN.  
1115 11TH STREET  
SACRAMENTO, CA 95814  
FOR: CALIFORNIA MANUFACTURERS &  
TECHNOLOGY ASSOCIATION

JANE E. LUCKHARDT  
ATTORNEY AT LAW  
DOWNEY BRAND LLP  
621CAPITOL MALL, 18TH FLOOR  
SACRAMENTO, CA 95814

KEVIN WOODRUFF  
WOODRUFF EXPERT SERVICES  
1100 K STREET, SUITE 204  
SACRAMENTO, CA 95814

MARK A. LOWDER

NICOLE WRIGHT

DIR - HOUSING FINANCE  
 CRHMFA HOMEBUYERS FUND  
 1215 K STREET, STE. 1650  
 SACRAMENTO, CA 95814

BRAUN BLAISING MCLAUGHLIN & SMITH  
 915 L STREET, SUITE 1270  
 SACRAMENTO, CA 95814

PAUL J. MASON  
 VP, POLICY & INCENTIVES  
 THE PACIFIC FOREST TRUST  
 1107 9TH ST., STE 1050  
 SACRAMENTO, CA 95814

STEVEN A. BRINK  
 VP - PUBLIC RESOURCES  
 CALIFORNIA FORESTRY ASSOCIATION  
 1215 K STREET, SUITE 1830  
 SACRAMENTO, CA 95814

TIFFANY K. ROBERTS  
 CALIFORNIA LEGISLATURE  
 LEGISLATIVE ANALYST'S OFFICE  
 925 L STREET, SUITE 1000  
 SACRAMENTO, CA 95814

MICHAEL BOCCADORO  
 AGRICULTURAL ENERGY CONSUMERS ASSN  
 925 L STREET, SUITE 800  
 SACRAMENTO, CA 95814-3704  
 FOR: AGRICULTURAL ENERGY CONSUMERS  
 ASSOCIATION

GREGGORY L. WHEATLAND  
 ELLISON SCHNEIDER & HARRIS, L.L.P.  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816  
 FOR: ENERGYSOURCE, LLC

CHRISTOPHER T. ELLISON  
 ATTORNEY  
 ELLISON, SCHNEIDER & HARRIS, L.L.P.  
 2600 CAPITOL AVENUE, SUITE 400  
 SACRAMENTO, CA 95816-5905

ROB ROTH  
 SACRAMENTO MUNICIPAL UTILITY DISTRICT  
 6201 S STREET MS 75  
 SACRAMENTO, CA 95817

VIKKI WOOD  
 SACRAMENTO MUNICIPAL UTILITY DISTRICT  
 6301 S STREET, MS A204  
 SACRAMENTO, CA 95817-1899

MICHAEL S. DAY  
 PRINCIPAL  
 ROCKWOOD CONSULTING  
 2701 2ND AVE.  
 SACRAMENTO, CA 95818

CAROL J. HURLOCK  
 CALIFORNIA DEPT. OF WATER RESOURCES  
 JOINT OPERATIONS CENTER  
 2033 HOWE AVE., STE. 220  
 SACRAMENTO, CA 95825-0181

LEE TERRY  
 CALIFORNIA DEPARTMENT OF WATER RESOURCES  
 2033 HOWE AVE., STE. 220  
 SACRAMENTO, CA 95825-0181

EMILIO E. VARANINI, III  
 4660 NATOMAS BLVD.  
 SACRAMENTO, CA 95835

STEVEN A. LIPMAN  
 STEVEN LIPMAN CONSULTING  
 5350 DUNLAY DRIVE, STE. 811  
 SACRAMENTO, CA 95835-1570

KAREN LINDH  
 CALIFORNIA ONSITE GENERATION  
 7909 WALERGA ROAD, NO. 112, PMB 119  
 ANTELOPE, CA 95843

JAMES L. BYARD PH.D.  
 11693 PHELPS HILL ROAD  
 NEVADA CITY, CA 95959-9150

CALIFORNIA PACIFIC ELECTRIC COMPANY, LLC  
 933 ELOISE AVENUE  
 SOUTH LAKE TAHOE, CA 96150

CHRISTIAN MENTZEL  
 CEM LLC  
 619 KUPULAU DR  
 KIHEI, HI 96753

MICHAEL ALCANTAR  
 ATTORNEY AT LAW  
 ALCANTAR & KAHL LLP  
 1300 SW 5TH AVE., STE 1750

PORTLAND, OR 97201

ROSS VAN NESS  
ALCANTAR & KAHL LLP  
1300 SW FIFTH AVENUE, SUITE 1750  
PORTLAND, OR 97201

VARNER SEAMAN  
CONSULTANT  
EDP RENEWABLES NORTH AMERICA, LLC  
53 SW YAMHILL  
PORTLAND, OR 97204

TASHIANA WANGLER  
PACIFICORP  
825 NE MULTNOMAH SREET, SUITE 2000  
PORTLAND, OR 97232

TERI IKEDA  
RENEWABLE COMPLIANCE OFFICER  
PACIFICORP  
825 NE MULTNOMAH, STE. 600  
PORTLAND, OR 97232

DONALD SCHOENBECK  
RCS, INC.  
900 WASHINGTON STREET, SUITE 780  
VANCOUVER, WA 98660

JOHN DUNN  
TRANSCANADA CORPORATION  
450 1ST ST. S.W.  
CALGARY, AB T2P 5H1  
CANADA

MEREDITH LAMEY  
TRANSCANADA CORPORATION  
450 1ST STREET S.W.  
CALGARY, AB T2P 5H1  
CANADA

DANIEL JURIJEW  
CAPITAL POWER CORPORATION  
12TH FLOOR EPCOR TOWER  
1200 - 10423 101 ST. NW  
EDMONTON, AB T5H 0E9  
CANADA

LISA CHERKAS  
MORGAN STANLEY CAPITAL GROUP, INC.  
200 BURRAND ST., STE. 610  
VANCOUVER, BC V6C 3L6  
CANADA

## State Service

---

CHERYL LEE  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

DAVID PECK  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

JACLYN MARKS  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

MATT MILEY  
CPUC  
LEGAL DIVISION  
EMAIL ONLY  
EMAIL ONLY, CA 00000  
FOR: DRA

ROBERT BLACKNEY  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

SARA KAMINS  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

WILLIAM DIETRICH  
CALIFORNIA PUBLIC UTILITIES COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000

LORRAINE GONZALES  
CALIFORNIA ENERGY COMMISSION  
EMAIL ONLY  
EMAIL ONLY, CA 00000-0000

ADAM SCHULTZ  
CALIF PUBLIC UTILITIES COMMISSION  
PROCUREMENT STRATEGY AND OVERSIGHT BRANC  
AREA 4-A  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

ANDREW KOTCH  
CALIF PUBLIC UTILITIES COMMISSION  
EXECUTIVE DIVISION  
ROOM 5301  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

ANDREW SCHWARTZ  
CALIF PUBLIC UTILITIES COMMISSION  
PROCUREMENT STRATEGY AND OVERSIGHT BRANC  
AREA 4-A  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

ANNE E. SIMON  
CALIF PUBLIC UTILITIES COMMISSION  
DIVISION OF ADMINISTRATIVE LAW JUDGES  
ROOM 5104  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

CHLOE LUKINS  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4101  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: DRA

CHRISTOPHER DANFORTH  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PRICING AND CUSTOMER PROGRAM  
ROOM 4209  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: DRA

CHRISTOPHER MYERS  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4104  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

DAVID SIAO  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4101  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

DEVLA SINGH  
CALIF PUBLIC UTILITIES COMMISSION  
POLICY & PLANNING DIVISION  
ROOM 5119  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

IRYNA KWASNY  
CALIF PUBLIC UTILITIES COMMISSION  
LEGAL DIVISION  
ROOM 4107  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: DRA

JASON SIMON  
CALIF PUBLIC UTILITIES COMMISSION  
PROCUREMENT STRATEGY AND OVERSIGHT BRANC  
AREA 4-A  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

JONATHAN J. REIGER  
CALIF PUBLIC UTILITIES COMMISSION  
LEGAL DIVISION  
ROOM 5035  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

JORDAN PARRILLO  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4104  
505 VAN NESS AVENUE

JOSEPH A. ABHULIMEN  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4209  
505 VAN NESS AVENUE

SAN FRANCISCO, CA 94102-3214  
FOR: DRA

SAN FRANCISCO, CA 94102-3214  
FOR: DRA

JULIE A. FITCH  
CALIF PUBLIC UTILITIES COMMISSION  
DIVISION OF ADMINISTRATIVE LAW JUDGES  
ROOM 5043  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

JULIE HALLIGAN  
CALIF PUBLIC UTILITIES COMMISSION  
CONSUMER PROTECTION AND SAFETY DIVISION  
ROOM 2203  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: CPSD

JUNAID RAHMAN  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PRICING AND CUSTOMER PROGRAM  
ROOM 4-A  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

KARIN M. HIETA  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4102  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: DRA

KE HAO OUYANG  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4104  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: DRA

KEITH D WHITE  
CALIF PUBLIC UTILITIES COMMISSION  
INFRASTRUCTURE PLANNING AND PERMITTING B  
AREA 4-A  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

MARCELO POIRIER  
CALIF PUBLIC UTILITIES COMMISSION  
LEGAL DIVISION  
ROOM 5025  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

MARK R. LOY  
CALIF PUBLIC UTILITIES COMMISSION  
ENERGY COST OF SERVICE & NATURAL GAS BRA  
ROOM 4205  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214  
FOR: DRA

MICHAEL COLVIN  
CALIF PUBLIC UTILITIES COMMISSION  
EXECUTIVE DIVISION  
ROOM 5212  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

NIKA ROGERS  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4101  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

NILGUN ATAMTURK  
CALIF PUBLIC UTILITIES COMMISSION  
POLICY & PLANNING DIVISION  
ROOM 5119  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

PAUL DOUGLAS  
CALIF PUBLIC UTILITIES COMMISSION  
PROCUREMENT STRATEGY AND OVERSIGHT BRANC  
AREA 4-A  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

RAHMON MOMOH  
CALIF PUBLIC UTILITIES COMMISSION  
EXECUTIVE DIVISION  
ROOM 5206  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

REGINA DEANGELIS  
CALIF PUBLIC UTILITIES COMMISSION  
DIVISION OF ADMINISTRATIVE LAW JUDGES  
ROOM 5105  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214



SEAN A. SIMON  
CALIF PUBLIC UTILITIES COMMISSION  
PROCUREMENT STRATEGY AND OVERSIGHT BRANC  
AREA 4-A  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

TRACI BONE  
CALIF PUBLIC UTILITIES COMMISSION  
LEGAL DIVISION  
ROOM 5027  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

XIAO SELENA HUANG  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4102  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

YULIYA SHMIDT  
CALIF PUBLIC UTILITIES COMMISSION  
ELECTRICITY PLANNING & POLICY BRANCH  
ROOM 4108  
505 VAN NESS AVENUE  
SAN FRANCISCO, CA 94102-3214

CLARE LAUFENBER GALLARDO  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS-46  
SACRAMENTO, CA 95814

CONSTANCE LENI  
CALIFORNIA ENERGY COMMISSION  
MS-20  
1516 NINTH STREET  
SACRAMENTO, CA 95814

GINA BARKALOW  
CALIFORNIA ENERGY COMMISSION (CEC)  
1516 NINTH STREET MS-45  
SACRAMENTO, CA 95814

HEATHER RAITT  
CALIFORNIA ENERGY COMMISSION  
1516 9TH STREET, MS 45  
SACRAMENTO, CA 95814

KATE ZOCCHETTI  
CALIFORNIA ENERGY COMMISSION  
1516 9TH STREET, MS-45  
SACRAMENTO, CA 95814

MARC PRYOR  
CALIFORNIA ENERGY COMMISSION  
1516 9TH ST, MS 20  
SACRAMENTO, CA 95814

MICHAEL JASKE  
CALIFORNIA ENERGY COMMISSION  
1516 9TH STREET, MS-20  
SACRAMENTO, CA 95814

PAMELA DOUGHMAN  
CALIFORNIA ENERGY COMMISSION  
TECHNOLOGY SYSTEMS DIVISION  
1516 9TH STREET, MS 45  
SACRAMENTO, CA 95814

REBECCA TSAI-WEI LEE  
CALIF PUBLIC UTILITIES COMMISSION  
DRA - ADMINISTRATIVE BRANCH  
770 L Street, Suite 1250  
Sacramento, CA 95814

DAVID VIDAVER  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS-20  
SACRAMENTO, CA 95814-5512

GABRIEL HERRERA  
OFFICE OF CHIEF COUNSEL  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS 14  
SACRAMENTO, CA 95814-5512

JAMES HAILE  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS 45  
SACRAMENTO, CA 95814-5512

JIM WOODWARD  
ELECTRICITY SUPPLY ANALYSIS DIVISION  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS 20

KEVIN CHOU  
ANALYST - ENERGY  
CALIFORNIA ENERGY COMMISSION  
1516 NINTH STREET, MS 45

SACRAMENTO, CA 95814-5512

SACRAMENTO, CA 95814-5512

ROSS A. MILLER  
ELECTRICITY ANALYSIS OFFICE  
CALIFORNIA ENERGY COMMISSION  
1516 9TH STREET MS 20  
SACRAMENTO, CA 96814-5512

---

[TOP OF PAGE](#)  
[BACK TO INDEX OF SERVICE LISTS](#)

## Non-Email Parties

Angel Ayala  
Amonix, Inc.  
1709 Apollo Ct.  
Seal Beach, CA 90740