BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

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

SOUTHERN CALIFORNIA EDISON COMPANY'S (U 338-E) FIRST AMENDED 2012 RENEWABLES PORTFOLIO STANDARD PROCUREMENT PLAN

PUBLIC VERSION

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August 15, 2012

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE

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Pursuant to the *Assigned Commissioner's Ruling Identifying Issues and Schedule of Review for 2012 Renewables Portfolio Standard Procurement Plans Pursuant to Public Utilities Code Sections 399.11 et seq. and Requesting Comments on New Proposals*, dated April 5, 2012, and 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*, dated August 2, 2012, Southern California Edison Company ("SCE") respectfully submits its First Amended 2012 Renewables Portfolio Standard ("RPS") Procurement Plan.[1]

SCE's First Amended 2012 RPS Procurement Plan consists of the written plan (the "RPS Written Plan") and appendices thereto. The appendices include:

- Confidential/Public Appendix A - Redline of First Amended RPS Written Plan to May 23, 2012 Plan
- Confidential Appendix B - Project Development Status Update

[1] SCE is concurrently filing a Motion for Leave to File its Confidential First Amended 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 First Amended 2012 RPS Procurement Plan under seal.

- 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

- Confidential/Public Appendix D - Standard Cost Quantification Table

SCE submits these documents for consideration and approval by the Commission.

Respectfully submitted,

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/s/ Cathy A. Karlstad
By: Cathy A. Karlstad

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Dated: August 15, 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 **15th day of August, 2012**, at Rosemead, California.

/s/ Kathleen M. Sloan
By: Kathleen M. Sloan

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An *EDISON INTERNATIONAL* Company

(U 338-E)

First Amended 2012 Written Plan

August 15, 2012

PUBLIC VERSION

First Amended 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 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 seven proposals for revising the procurement planning and review process and solicits 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 a renewable net short methodology and directs 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 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 first amended version of its 2012 RPS Plan. 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 May 23, 2012 filing. In particular, 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 plan was filed; and
- Replaced Appendix B – Project Development Status Update – to reflect the most recent version of that document.

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").[1]

SB 2 (1x) also established three portfolio content categories of renewable electricity products that may be used to satisfy the State's RPS goals.[2] 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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1 *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.

2 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,[3] permits banking of excess procurement across compliance periods subject to certain conditions,[4] grants a waiver of compliance under certain circumstances,[5] determines that contracts signed prior to June 1, 2010 count in full toward RPS procurement requirements,[6] and directs the Commission to establish a cost limitation for each electrical corporation.[7] 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 open to all renewable resources in this cycle. Given SCE's renewable procurement

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3 Cal. Pub. Util. Code § 399.15(a).
4 *Id.* § 399.13(a)(4)(B).
5 *Id.* § 399.15(b)(5).
6 *Id.* § 399.16(d).
7 *Id.* §§ 399.15(c)-(d).

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.[8]

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.[9] 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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[8] 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.

[9] After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

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;[10] 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

[10] 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.

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.[11] 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

[11] 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).

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, 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, 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.[12] 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."[13] 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).[14]

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[12] If load growth is taken into account, this percentage is even higher.
[13] Renewables Portfolio Standard Quarterly Report at 3 (October 2008).
[14] 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 1-4 (June 2009).

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."[15] 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.[16]

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

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15 Renewables Portfolio Standard Quarterly Report at 7 (Q4 2009).

16 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 4 (June 2009).

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.[17] 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).[18] 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

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17 *See* American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5 (2009).

18 *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).

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.

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."[19] 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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[19] 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 lead 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 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.[20] 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. Curtailment

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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[20] 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;[21] 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:

[21] After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

- 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;[22]
- 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;[23] 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.

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[22] 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.

[23] After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

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."[24] 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

[24] Cal. Pub. Util. Code § 399.13(a)(4)(D).

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. 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 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").[25] 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.[26] 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.[27]

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[25] The CAISO has adopted the reform and it is currently before FERC for approval.

[26] 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.

[27] 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 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 an effort to optimize SCE's renewable portfolio and provide customers with the most value from the portfolio, SCE seeks the authority to: (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; (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 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.[28]

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 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.[29] 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

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[28] 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.

[29] 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.

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.[30]

[30] 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 First Amended RPS Written Plan to May 23, 2012 Plan

An *EDISON INTERNATIONAL* Company

(U 338-E)

First Amended 2012 Written Plan

~~May 23,~~August 15, 2012

PUBLIC VERSION

First Amended 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 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 seven proposals for revising the procurement planning and review process and solicits feedback on these proposals.

Southern California Edison Company ("SCE") ~~provides this 2012 Written Plan and appendices hereto, which together comprise SCE's 2012 RPS Plan. Concurrently herewith, SCE is also filing~~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 a renewable net short methodology and directs 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 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 first amended version of its 2012 RPS Plan. 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 May 23, 2012 filing. In particular, 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 plan was filed; and
- Replaced Appendix B – Project Development Status Update – to reflect the most recent version of that document.

B. Overview of 2012 RPS Plan

~~In~~As SCE continues to make progress toward the State's RPS goals, and in planning for renewable procurement in 2012 and beyond, SCE ~~must take~~has taken into account the regulatory framework established by the new 33% RPS statute ~~into account~~. 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").[1]

SB 2 (1x) also established three portfolio content categories of renewable electricity products that may be used to satisfy the State's RPS goals.[2] 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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1 *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.

2 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,[3] permits banking of excess procurement across compliance periods subject to certain conditions,[4] grants a waiver of compliance under certain circumstances,[5] determines that contracts signed prior to June 1, 2010 count in full toward RPS procurement requirements,[6] and directs the Commission to establish a cost limitation for each electrical corporation.[7] ~~However,~~All of these provisions have not yet been implemented by the Commission.[8] 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. ~~In its 2012 RPS Plan, SCE proposes using a targeted solicitation process that meets SCE's need for specific resources. Specifically, SCE intends to narrow its next solicitation to Category 1 products. Likewise, SCE will emphasize a need for projects with later commercial on-line dates~~

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

3 Cal. Pub. Util. Code § 399.15(a).

4 *Id.* § 399.13(a)(4)(B).

5 *Id.* § 399.15(b)(5).

6 *Id.* § 399.16(d).

7 *Id.* §§ 399.15(c)-(d).

~~8 On April 24, 2012, Administrative Law Judge Simon issued a Proposed Decision Setting Compliance Rules for the Renewables Portfolio Standard Program. That proposed decision has not yet been approved by the Commission.~~

~~given that SCE does not have a near-term renewable procurement need. SCE also plans to require projects to have, at least, a completed Interconnection Study as demonstrated by a completed System Impact Study, Facilities Study, a Phase I or Phase II Interconnection Study, documentation showing that the project has passed Fast Track screens, or a signed Interconnection Agreement in place in order to submit a proposal, and a Phase II Interconnection Study (or equivalent or better) completed prior to entering into the contract. In this way, SCE will engage with developers of projects further along in the development cycle and have more accurate information about the costs of interconnection upgrades prior to contract execution. These changes to SCE's solicitation process will enable SCE to procure resources that minimize costs and maximize value to SCE's customers. Additionally, this process will target the most viable proposals that fit SCE's portfolio, thus focusing the efforts of both SCE and renewable developers on the most promising project proposals.~~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 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~~program, the utility-owned generation and independent power producer portions of SCE's ~~Solar Photovoltaic Program ("~~SPVP~~")~~, the Public Utilities Code Section 399.20 ~~feed-in tariff (~~"FiT"~~)~~ program, the ~~Renewable Auction Mechanism ("RAM")~~RAM program adopted by the Commission, ~~qualifying facility ("QF")~~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 ~~– is~~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.[8]

Specifically, both forecasts are based on the New Procurement Targets for the 33% RPS program ~~and SCE's most recent bundled retail sales forecast. The forecast assumes that all of SCE's executed contracts will be approved by the Commission and incorporates~~. 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.[9] 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 ~~forecast accounts~~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 ~~60%~~ success rate for delivered energy from contracts that are executed but not yet on-line. ~~SCE assumes a 100% success rate for projects that are currently on-line. SCE also includes additional generation from existing mandatory procurement programs such as the RAM program, the FiT program, and SCE's SPVP at a 100% success rate and 100% recontracting~~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

[8] 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.

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;[10] 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 ~~[XXXXXXX]~~XXXXXXX kWh and RPS-eligible procurement of ~~51.3~~49.6 billion kWh, for a net long position of about ~~[XXXXXXX]~~XXx xxxxxx kWh. In the second compliance period, SCE forecasts a procurement quantity requirement of ~~[XXXXXXX]~~XXXxxxxxx kWh and RPS-eligible procurement of ~~64.6~~62.8 billion kWh, for a net long position of about ~~[XXXXXXX]~~XXxxxxxxx kWh. In the third compliance period, SCE forecasts a procurement quantity requirement of 99 billion kWh and RPS-eligible procurement of ~~88~~84.3 billion kWh, for a net short position of about ~~11~~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. ~~Whether and to what extent SCE's anticipated net long positions may be carried forward to cover future net short positions will depend on the RPS compliance rules adopted by the Commission, which are still being implemented.~~

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[9] After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

[10] 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

Using the Commission's renewable net short methodology as set forth in Appendix C.2, SCE forecasts a net long position of approximately XXxxxxxx kWh for the first compliance period and a net long position of approximately XXxxxxxxx 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.~~9~~[11] 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

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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.

~~9~~[11] 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

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.

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 ~~seeking resources to augment those already under contract to fulfill its need in the latter half of the decade.[10] SCE plans to utilize a variety of procurement options to help meet the State's RPS goals~~procurement from the procurement programs discussed above, including the RAM program, the FiT program, SCE's SPVP, QF standard contracts, ~~bilateral negotiations with competitive renewable energy projects, and~~ any new processes approved by the Commission, and bilateral negotiations with competitive renewable energy projects. Furthermore, as discussed in Section ~~XII~~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.

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

~~[10] SCE will also utilize banking of excess procurement and any other final RPS compliance rules implemented by the Commission, as appropriate.~~

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 ~~requirements~~needs primarily through Category 1 products, either through a future solicitation, 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 ~~the third compliance period 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 ~~analysis~~ ("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. ~~SCE's LCBF approach is described in more detail in Section VIII and Appendix F.1 – Least Cost Best Fit Methodology.~~

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% ~~by 2010~~ to 33% ~~by 2020,~~, which represents a 65% increase in procurement of

renewable energy without taking into account load growth.[11][12] 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."[12][13] 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).[13][14]

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

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[11][12] If load growth is taken into account, this percentage is even higher.
[12][13] Renewables Portfolio Standard Quarterly Report at 3 (October 2008).
[13][14] 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 1-4 (June 2009).

level."[14][15] 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.[15][16]

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.

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.[16][17] 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).[17][18] These aggressive construction

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[14][15] Renewables Portfolio Standard Quarterly Report at 7 (Q4 2009).

[15][16] 33% Renewables Portfolio Standard Implementation Analysis Preliminary Results at 4 (June 2009).

[16][17] *See* American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5 (2009).

[17][18] *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).

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.

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 [~~Self-Generation Incentive~~

~~Program~~Small Generator Interconnection Process] process."[~~18~~19] 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 lead 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

[~~18~~19] Tariff Amendment to Revise Generator Interconnection Procedures at 5 (October 19, 2010) (available at http://www.caiso.com/2834/2834c11a4c2f0.html).

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 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 ~~will~~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~~program, and in 2009 and 2010, executed 35 contracts resulting from that program for approximately 459 MW of renewable energy.[~~19~~20] 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. Curtailment

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

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~~19~~20 Four of those contracts for about 65 MW were subsequently terminated.

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 ~~through 2022,~~, 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;
- ~~60% successfully~~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;[21] and
- 100% success in re-contracting with projects 20 MW or less.

[21] After contracts from such programs are signed, they are risk adjusted just like other projects with executed contracts that are not yet on-line.

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;[22]
- 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;[23] and
- No re-contracting assumptions.

Appendix C ~~details~~.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) ~~and establishes~~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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22 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.

23 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 ~~60%~~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 ~~60%~~ 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 ~~60%~~ 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."~~20~~24 Moreover, SCE procures based on a forecast using the ~~60%~~ 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. BID SOLICITATION PROTOCOL, INCLUDING LCBF METHODOLOGIES~~

~~A. Bid Solicitation Protocol~~

~~SCE has included its 2012 Procurement Protocol as Appendix E.1. The 2012 Procurement Protocol includes, among other things:~~

- ~~SCE's preferred on-line dates and contract term lengths.~~
- ~~Deliverability characteristics and locational preferences.~~
- ~~Requirements for each proposal submission.~~

~~2024~~ Cal. Pub. Util. Code § 399.13(a)(4)(D).

- A description of the type of product SCE is soliciting.
- A schedule of key dates related to the 2012 RFP.
- SCE's 2012 Pro Forma Renewable Power Purchase and Sale Agreement ("Pro Forma"), attached hereto as Appendix G.1.

A list of important changes in the 2012 RPS Plan from the 2011 version (including changes to the Procurement Protocol and Pro Forma) can be found in Section XIII.

B. **LCBF Methodology**

In its LCBF evaluation process, SCE performs a quantitative assessment of each proposal individually and subsequently ranks them based on each proposal's benefit and cost relationship. The result of the quantitative analysis is a merit-order ranking of all complete and conforming proposals' net levelized cost that help define the preliminary shortlist. In parallel with the quantitative analysis, SCE will conduct an in-depth assessment of the top proposals' qualitative attributes. These qualitative attributes are considered to either eliminate non-viable proposals or add projects with high viability to the final shortlist, or to determine tie-breakers, if any. By taking many quantitative and qualitative factors into consideration, SCE ensures that it will select projects best suited for its portfolio in order to meet customer needs and attain the State's RPS goals. This process is described in SCE's LCBF Methodology, which is attached as Appendix F.1.

Moreover, SCE's time-of-delivery ("TOD") factors in its contract are intended to reflect the value of energy and capacity that SCE uses in the valuation of projects as part of the LCBF evaluation process. SCE has established new factors, which are included in SCE's 2012 Pro Forma at Exhibit J. SCE expects to update these values shortly before the launch of its RFP. Thus, in order to align the TOD factors with SCE's valuation of projects, SCE will adjust, if needed, the TOD factors filed with this 2012 RPS Plan to reflect any of these changes.

VIII.~~IX.~~ ESTIMATING TRANSMISSION COSTS FOR THE PURPOSE OF RPS PROCUREMENT AND BID EVALUATION

In ~~its next RFP solicitation~~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. ~~To participate in the RFP, SCE will~~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 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").~~21~~25 For Queue Cluster 5 and beyond, the CAISO, in conjunction with the ~~CPUC~~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.~~22~~26 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.~~23~~27

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. ~~In order to determine the transmission adder for fully deliverable projects in Queue Cluster 5, SCE proposes to have the ability to align its solicitation schedule with the release of the CAISO's annual transmission plan.~~

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.

~~21~~25 The CAISO has adopted the reform and it is currently before FERC for approval.

~~22~~26 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.

~~23~~27 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.

IX.~~X.~~ 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. ~~SCE does not plan to solicit~~ ~~a specific type of indexing structure in~~ ~~its solicitation materials. As in SCE's 2011 RFP, SCE intends to include an option that a seller may submit an indexed pricing bid so long as the seller also includes a fixed contract price. Sellers may propose a price indexed to commodities, equipment, cost of financing, etc., and may also consider placing price ceilings and floors on the indexed price.~~ 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 bilateral contracts or in future solicitations.

X.~~XI.~~ 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.

XL.~~XII.~~ 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 an effort to optimize SCE's renewable portfolio and provide customers with the most value from the portfolio, SCE seeks the authority to: (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; (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 Tier 2 advice letter under ~~certain~~ 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.[24][28]

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 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.[25][29] 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.

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[24][28] 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.

[25][29] 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.

XII.~~XIII.~~ IMPORTANT CHANGES FROM 2011 RPS PLAN

SCE's 2012 RPS Plan ~~includes important changes to: (1) SCE's 2012~~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~~; and (2) SCE's 2012 Pro Forma.[26]~~ or *pro forma* PPA or discussed important changes related thereto.[30] ~~Those changes are summarized below and shown in the redlines of these documents included as Appendices E.2 and G.2.[27]~~

~~A. Important Changes to SCE's 2012 Procurement Protocol~~

~~1. SCE Will Only Consider Proposals for Category 1 Products~~

~~Because there is no limitation on the amount of Category 1 products that may be procured for RPS compliance, Category 1 resources provide more certainty and flexibility to SCE than Category 2 or Category 3 products. Accordingly, SCE's procurement protocol only requests proposals for renewable energy that qualifies under Category 1. Historically, the overwhelming majority of proposals SCE has received in past solicitations have been for Category 1 products. Therefore, SCE does not anticipate that restricting the solicitation to Category 1 products will negatively impact competition. At this time, limiting the pool to Category 1 products makes practical sense for SCE. Limiting the solicitation to Category 1 products will target proposals that are more likely to result in executed contracts, thus focusing the efforts of both SCE and renewable developers on the most promising project proposals. Accordingly, it will save SCE and sellers time by simplifying the solicitation and evaluation process.~~

~~26~~30 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.

~~27 The redline of SCE's 2012 Procurement Protocol is included as Appendix E.2 and the redline of SCE's 2012 Pro Forma is included as Appendix G.2.~~

2. SCE Will Require Completed Interconnection Studies from Sellers in its Solicitation

In 2011, SCE's solicitation was open to all sellers regardless of where they were in the interconnection process. In contrast, SCE intends to add a requirement for its 2012 solicitation that projects have at least a completed Phase I Interconnection Study (as demonstrated by a completed System Impact Study, Facilities Study, a 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 Phase II Interconnection Study (or equivalent or better) completed prior to execution of the contract. Upon reviewing the Phase II Interconnection Study, SCE may decide to remove the project from the shortlist, if the network upgrade costs are too high. If SCE decides to execute a contract, the parties would execute the contract before the Seller is required to post security as part of the Phase II process. Sellers who were not able to complete Phase II Interconnection Studies within this timeframe may bid into the next solicitation.

Through this approach, SCE will have more information regarding the project's transmission costs and customer value at an early stage in the solicitation and will have more information about the transmission and interconnection risks prior to entering into the contract. Likewise, the Commission will also have a better idea of the project's transmission cost at an early stage, and any risks associated with those costs and timing of the interconnection. This requirement also provides a deadline by which the solicitation process must end. Finally, by ensuring that shortlisted projects have completed interconnection studies, the risk of project failure due to interconnection issues could be mitigated.

3. SCE Will Allow for More Flexibility in Bidding Resource Adequacy

As part of the 2012 solicitation, sellers will have the option of bidding a project as an Energy-Only ("EO") interconnection or based on an interconnection with Full Capacity Deliverability Status ("FCDS").[28] Sellers can also choose the date the project will obtain FCDS, including a date after the commercial operation date ("COD"). Those projects bid as EO will receive a congestion adder in the valuation process during the periods the project has an EO status. Those projects that bid with FCDS will not.

Separate and apart from the interconnection status contemplated for the project, sellers will also have the ability to designate the amount of Resource Adequacy ("RA") benefits, if any, the seller will provide for each month of the year during the contract term. This amount can be less than the expected Net Qualifying Capacity ("NQC") of the project, but cannot be greater than the expected NQC. Seller may also propose to provide RA benefits from sources other than the project, but will still be limited by the quantity of RA benefits the seller can provide by the expected NQC of the project.

In addition, Seller may also designate the years it will provide RA benefits during the contract term, including a period that covers the life of the agreement or subset thereof. This allows seller to bid projects with RA benefits beginning at a time later than the COD.

Based on the seller's bid, the contract will reflect, in the form of contract obligations, the bid details regarding interconnection status, quantity of RA benefits, and the years RA benefits will be provided. In other words, if seller submits a proposal with FCDS on a date certain, the seller will be obligated to obtain FCDS by that date. Similarly, if seller's bid is based on the

[28] Consistent with Section XIII(a)(2), if a project is bid with FCDS, the Project must have an Interconnection Study based on an interconnection seeking FCDS. Without such a study, the Project cannot be bid as an FCDS project.

provision of a certain quantity of RA benefits during certain years of the agreement, then the contract will provide for RA performance requirements that reflect the seller's proposal.

SCE's changes create more flexibility for bidders and ensure that the valuation of a project is consistent with the benefits SCE's customers are expected to receive. Under this new structure, the seller is able to bid the type of interconnection, how much RA it intends to provide, and when it will be able to provide it. The new structure will also allow for a seller to make proposal whereby the RA is provided from a source other than the generating facility. Under SCE's previous solicitation, it was assumed that the seller would always provide the full NQC of RA from the facility, and be interconnected as a fully deliverable resource prior to COD. This structure eliminates these inflexible requirements and allows the seller to provide proposals that better fit the expected project.

4. **SCE May Require Shortlisted Bidders to Refresh Their Price Terms Prior to Determining the Successful Sellers**

As described in detail in SCE's 2012 Procurement Protocol, after evaluating each proposal, SCE will select the best proposals for inclusion on a shortlist. SCE is considering implementing a solicitation structure whereby SCE negotiates with shortlisted projects to completion based on a set timeline, then requests each seller to refresh its pricing and executes contracts with a subset of the projects that provide the most value to SCE's customers. At this time, SCE has not determined whether it will implement this solicitation structure. Based on available resources at the time of solicitation launch, SCE will make this determination.

SCE is considering this structure because the negotiation process can take a significant amount of time. During this period prices can fall. The structure outlined above provides benefits to SCE's customers because it allows SCE to take advantage of price drops over the negotiation

period. This process prevents proposal price terms from becoming stale and also shortens the time between contact execution and Commission approval, thereby reducing the risk of the Commission rejecting a contract due to a discrepancy between the price term and the market price.

B. **Important Changes to SCE's 2012 Pro Forma**

1. **Curtailment: Sections 3.12, 4.01, and 4.02, and Associated Definitions**

SCE's economic curtailment language from the 2011 Pro Forma is thorough and detailed. The economic curtailment language included in SCE's 2011 Pro Forma ties SCE's right to curtail without payment to prices in the day-ahead market. The language also includes certain rights for the seller and SCE regarding real-time bidding instructions. Whether seller is paid or not under the real-time scenarios depends on what instructions are given, whether the instructions are followed, and market prices. SCE has streamlined the economic curtailment language in its 2012 Pro Forma.

The language in SCE's proposed 2012 Pro Forma provides SCE with more options for handling curtailment events, should curtailments prove necessary. Specifically, the 2012 language allows SCE to curtail sellers for any reason, without payment, up to a megawatt hour curtailment cap (i.e., 50 hours for every megawatt hour of contract capacity). SCE can curtail in excess of the cap with payment to the seller for the amount of energy that could have been delivered, absent the curtailment, thus, maintaining revenue certainty for the project in order to facilitate financing of the project. As with the 2011 language, any amounts over the cap that SCE pays for but does not receive as the result of curtailment during the term of the contract, may, at SCE's election, be delivered at the end of the contract term subject to a two-year payback limitation. SCE's 2012 language also maintains the potential exception of excluding on-peak hours – SCE must pay for any energy curtailed during on-peak hours, regardless of the cap. Finally, SCE's ability to curtail

due to emergencies, instructions from the CAISO or instructions from the transmission or sub-transmission provider remains unchanged.

SCE has been successful in incorporating this language into contracts with current sellers in its portfolio.

2. **Changes to SCE's TOD Factors -- Exhibit J**

SCE modified its TOD factors for the 2012 Pro Forma. Exhibit J to the 2012 Pro Forma also provides two different sets of TOD allocation factors: EO TOD factors and FCDS TOD factors.[29] These TOD factors adjust the amount of payment a generating facility receives based on which hour the project delivers its power. Over an entire year, both sets of TOD factors result in an adjustment factor of 1.0 to the contract price. The only difference between the TOD factors is that payment under the FCDS TODs is "peakier" (i.e., FCDS TODs are higher than EO TODs during the on-peak period, but lower than EO TODs in the off-peak period). SCE will apply the set of TOD factors that is applicable to the type of interconnection contemplated under the agreement. Thus, if a project is interconnected as EO, it will receive the EO TODs; if it is interconnected as FCDS, it will receive the FCDS TODs.

It is important to note that SCE's valuation is based on post-TOD contract payment. Thus, which sets of TOD factors the project uses is irrelevant in the selection of projects. Instead, TODs are intended to reflect the difference in value of the energy provided to SCE *during the term of the contract*. For example, if a project is interconnected as an FCDS resource, it will likely also provide RA benefits, and will likely be evaluated as if the project was going to provide RA benefits. The "peakier" TODs for an FCDS are intended to align payment *during the term of the contract* with the value SCE expected from the generating facility coming out of the evaluation.

3. **Resource Adequacy Bidding Flexibility: Sections 3.01, 3.02, Exhibit J, and Associated Definitions**

SCE has added provisions to the 2012 Pro Forma specific to projects that deliver RA and projects that do not deliver RA. As stated above, SCE will allow sellers to determine how many RA benefits the project will provide and over what years the project will provide it. Based on this proposal, SCE will evaluate a project accordingly. In other words, the amount of RA benefits a project receives in the valuation will be based on the amount and years indicated by the seller. However, to align the valuation of a project with the actual performance under a contract, the 2012 Pro Forma provides for RA performance requirements reflective of the amount of RA benefits the seller proposes.[30] More specifically, in the event the seller is unable to provide the amount of RA benefits indicated in the contract, the bidder will have the choice to either: (1) pay a fixed liquidated damages amount[31] at the Capacity Procurement Mechanism ("CPM") price (escalated by 2% per annum) at the time seller submits its proposal, or (2) have an obligation to provide replacement RA from another source to SCE. This change is aligned with the additional bidding flexibility described in Section XIII.A.3, above.

4. **Seller's Buy Down Rights: Section 2.04(a)(iii)**

In order to protect SCE's customers from excessive network upgrade costs, SCE's 2012 Pro Forma provides for a right to terminate the contract if the reimbursable network upgrade costs

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[29] SCE may update these factors prior to launching its RFP.

[30] In the past, SCE's valuation gave full RA credit to projects without any contractual commitments (beyond the attainment of FCDS) to actually provide RA to SCE. Thus, a project could be selected and receive a contract with SCE based on a certain expected amount of RA that project would provide over the life of the agreement, but not actually provide that level of RA.

[31] This amount will be fixed at the time of contract execution and will not float or be indexed to future changes in the CPM.

in an Interconnection Study or agreement for a project exceed a certain amount.[32] This is substantially the same provision that SCE had in its 2011 Pro Forma. In response to certain market concerns, SCE has added language to its 2012 Pro Forma that gives sellers, in lieu of termination, the right to pay the excess network upgrade costs without reimbursement from the IOUs' customers. This provision allows sellers to avoid termination and step in and keep the contract in place if it makes economic sense for them to do so.

5. **Excess Deliveries: Section 1.06(c)**

Section 1.06(c) of the 2012 Pro Forma provides for a reduced or no payment for deliveries in excess of threshold amounts. During any hour, if the seller delivers energy in excess of 110% of the contract capacity, then the seller will not be paid for the excess amounts (above 110%) delivered in that hour. The basis of this limitation is to ensure that the seller has not installed capacity in excess of contract capacity. In addition, Section 1.06(c) provides that if the seller delivers more than 115% of the expected annual net energy production within a year, then seller is paid 75% of the contract price for all deliveries above this amount for the remainder of that year. This new provision gives sellers additional incentive to bid their contract capacity and capacity factors correctly. It also helps to make sure that SCE receives and pays only for the energy SCE has contracted for, and not for amounts over what SCE expects under the contract. In addition, it is important to note that this concept existed in SCE's 2011 Pro Forma, and replaces the former Exhibit S. Similar to SCE's new language above regarding deliveries in excess of 115%, Exhibit S of the 2011 Pro Forma provided for a reduction in pricing based on increases in the capacity factor. The amount of reductions was left open to negotiations and proved difficult for SCE and the seller

[32] It is important to note that this termination right expires after the provision of the Interconnection Study or agreement. In other words, under this provision, the seller would not be subject to termination for cost overruns or

~~to come to agreement. Thus, in order to avoid these negotiations, SCE has included a set excess amount and price reduction in the agreement.~~

~~cost changes during the actual construction of the transmission upgrade.~~

Document comparison by Workshare Compare on Tuesday, August 14, 2012 10:49:27 AM

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Description	First Amended 2012 RPS Procurement Plan - RPS Written Plan (Public)
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Legend:	
Insertion	
~~Deletion~~	
~~Moved from~~	
Moved to	
Style change	
Format change	
~~Moved deletion~~	
Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

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Deletions	206
Moved from	6
Moved to	6
Style change	0
Format changed	0
Total changes	390

APPENDIX B

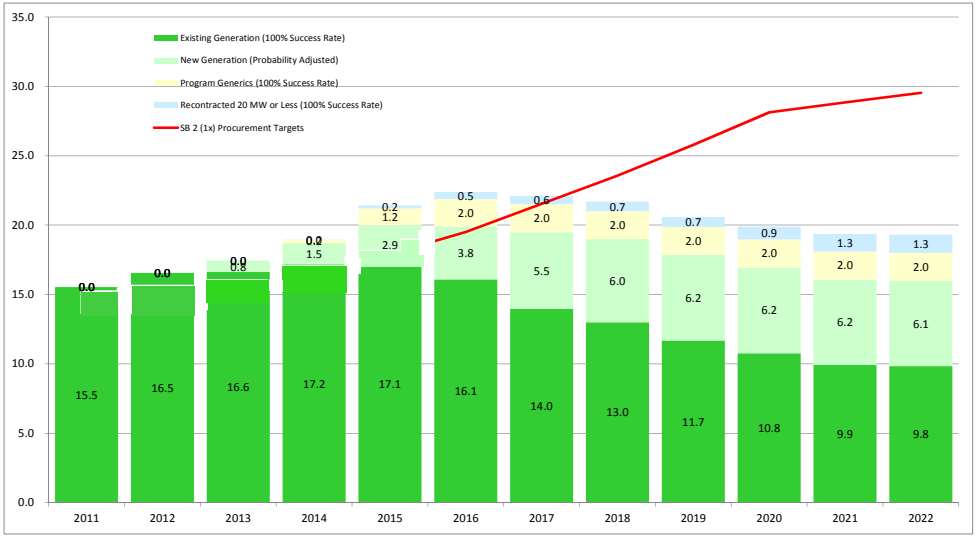
Project Development Status Update

[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	[redacted]				78.0	79.7	81.2	83.2	85.2	87.4	89.6
SB 2 (1x) Procurement Targets	14.8	[redacted]				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	[redacted]	[redacted]	329.4	87.4	89.6
SB 2 (1x) Procurement Targets	[redacted]	[redacted]	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>	[redacted]	[redacted]	(14.7)	(9.5)	(10.2)
Banked Surplus	[redacted]	[redacted]	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	[redacted]	[redacted]	(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
1)	Gross Surplus / <Deficit> [1]	Annual	789					2,364	638	(1,427)	(4,160)	(6,725)	(7,721)	(11,558)	(12,361)
		Compliance Period										(11,675)	(7,721)	(11,558)	(12,361)
2)	Banked Surplus	Annual	789					2,364	638	0	0	0	0	0	0
		Compliance Period										638	0	0	0
	Bank Usage	Annual						0	0	1,427	4,160	6,725	1,823	0	0
		Compliance Period										12,313	1,823	0	0
	Bank Balance	Annual	789					13,498	14,136	12,709	8,548	1,823	0	0	0
		Compliance Period										1,823	0	0	0
3)	Net Surplus / <Deficit> After Bank	Annual	789					2,364	638	0	0	0	(5,897)	(11,558)	(12,361)
		Compliance Period										638	(5,897)	(11,558)	(12,361)
4)	**Rolling 20-year RNS**		**146,509**												
	Net RPS Position [2]	Annual	21.1%					28.0%	27.8%	27.2%	25.6%	24.4%	23.1%	20.1%	19.6%
		Compliance Period										26.2%	23.1%	20.1%	19.6%
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
	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
	Generic Program		0	11	22	246	1,220	1,969	2,019	2,019	2,019	2,024	2,019	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
5)	RPS-Eligible Procurement														
	Existing Generation				48,697			50,395				49,428	9,920	9,836	9,826
	New Generation				829			8,193				23,862	6,157	6,139	6,122
	Generic Program				33			3,435				8,080	2,019	2,019	2,019
	Total	Compliance Period			49,559			62,023				81,370	18,095	17,994	17,967
6)	Failure Rate - New Projects Not Yet Online	Annual	N/A	0%	36%	43%	42%	45%	49%	50%	50%	50%	50%	50%	50%
		Compliance Period			35%			44%				50%	50%	50%	50%
7)	Failure Rate - Existing Generation	Annual	N/A	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
		Compliance Period			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
		Compliance Period			0			0				0	0	0	0
Annual RPS Risk-adjusted Net Short Calculation			**(789)**					**(2,364)**	**(638)**	**1,427**	**4,160**	**6,725**	**7,721**	**11,558**	**12,361**
Total RPS Risk-adjusted Net Short Calculation			**(1,823)**	**5,897**	**17,455**	**29,816**	**43,240**	**57,564**	**73,010**	**89,484**	**106,860**	**125,288**	**146,509**		

Notes:

[1] 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

[2] Net RPS Position is total RPS-eligible procuremnent as a percentage of bundled retail sales

	GWH		2024	2025	2026	2027	2028	2029	2030
1)	Gross Surplus / <Deficit> [1]	Annual	(13,424)	(14,323)	(15,446)	(16,475)	(17,375)	(18,429)	(21,220)
		Compliance Period	(13,424)	(14,323)	(15,446)	(16,475)	(17,375)	(18,429)	(21,220)
2)	Banked Surplus	Annual	0	0	0	0	0	0	0
		Compliance Period	0	0	0	0	0	0	0
	Bank Usage	Annual	0	0	0	0	0	0	0
		Compliance Period	0	0	0	0	0	0	0
	Bank Balance	Annual	0	0	0	0	0	0	0
		Compliance Period	0	0	0	0	0	0	0
3)	Net Surplus / <Deficit> After Bank	Annual	(13,424)	(14,323)	(15,446)	(16,475)	(17,375)	(18,429)	(21,220)
		Compliance Period	(13,424)	(14,323)	(15,446)	(16,475)	(17,375)	(18,429)	(21,220)
4)	**Rolling 20-year RNS**								
	Net RPS Position [2]	Annual	18.8%	18.2%	17.5%	16.9%	16.5%	15.9%	13.8%
		Compliance Period	18.8%	18.2%	17.5%	16.9%	16.5%	15.9%	13.8%
5)	RPS-Eligible Procurement								
	Existing Generation		9,610	9,588	9,373	9,237	9,226	9,093	7,404
	New Generation		6,118	6,088	6,071	6,054	6,050	6,021	5,794
	Generic Program		2,024	2,019	2,019	2,019	2,024	2,019	2,019
	Total	Annual	17,752	17,695	17,462	17,310	17,301	17,133	15,217
5)	RPS-Eligible Procurement								
	Existing Generation		9,610	9,588	9,373	9,237	9,226	9,093	7,404
	New Generation		6,118	6,088	6,071	6,054	6,050	6,021	5,794
	Generic Program		2,024	2,019	2,019	2,019	2,024	2,019	2,019
	Total	Compliance Period	17,752	17,695	17,462	17,310	17,301	17,133	15,217
6)	Failure Rate - New Projects Not Yet Online	Annual	50%	50%	50%	50%	50%	50%	50%
		Compliance Period	50%	50%	50%	50%	50%	50%	50%
7)	Failure Rate - Existing Generation	Annual	0%	0%	0%	0%	0%	0%	0%
		Compliance Period	0%	0%	0%	0%	0%	0%	0%
8)	Voluntary Margin of Over-Procurement	Annual	0	0	0	0	0	0	0
		Compliance Period	0	0	0	0	0	0	0
Annual RPS Risk-adjusted Net Short Calculation			**13,424**	**14,323**	**15,446**	**16,475**	**17,375**	**18,429**	**21,220**
Total RPS Risk-adjusted Net Short Calculation									

Notes:

[1] Bundled retail sales forecast for 2012-2016 and 2022-2030 is from SCE's

[2] Net RPS Position is total RPS-eligible procuremnent as a percentage of l

PUBLIC APPENDIX D

Standard Cost Quantification Table

Table 1 (Actual Costs)

		Actual RPS-Eligible Procurement and Generation Costs								
1	**Technology Type**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**
2	Biogas	$ 49,239,752	$ 55,218,581	$ 58,024,700	$ 55,842,748	$ 46,391,310	$ 45,669,901	$ 41,319,957	$ 46,567,994	$ 45,003,728
3	Biomass	$ 30,229,214	$ 30,641,340	$ 29,266,687	$ 29,364,748	$ 31,995,803	$ 32,870,627	$ 37,676,121	$ 39,934,586	$ 32,647,359
4	Geothermal	$ 533,787,287	$ 568,528,010	$ 569,145,247	$ 540,276,590	$ 564,191,771	$ 682,923,953	$ 591,094,390	$ 601,071,879	$ 585,397,425
5	Small Hydro	$ 14,680,635	$ 13,351,784	$ 23,129,437	$ 22,350,522	$ 11,682,561	$ 17,217,269	$ 12,197,656	$ 19,239,880	$ 26,057,270
6	Solar PV	$ 2,303	$ 1,077	$ 574	$ 111	$ -	$ -	$ 116,015	$ 6,014,872	$ 6,175,717
7	Solar Thermal	$ 109,767,959	$ 109,176,941	$ 102,333,401	$ 100,464,297	$ 108,126,446	$ 118,442,549	$ 118,633,943	$ 122,739,976	$ 124,859,719
8	Wind	$ 150,501,168	$ 168,906,414	$ 164,098,293	$ 158,644,762	$ 185,560,185	$ 211,157,917	$ 197,306,648	$ 298,846,815	$ 443,074,749
9	UOG Small Hydro	$ 18,919,069	$ 20,783,330	$ 22,004,724	$ 25,476,773	$ 28,921,419	$ 29,624,912	$ 32,852,293	$ 35,084,449	$ 46,523,880
10	UOG Solar	$ -	$ -	$ -	$ -	$ -	$ 1,235,712	$ 3,576,168	$ 10,838,789	$ 30,970,261
11	**Total CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 2 through 10]	**$ 907,127,388**	**$ 966,607,475**	**$ 968,003,063**	**$ 932,420,551**	**$ 976,869,495**	**$ 1,139,142,839**	**$ 1,034,773,190**	**$ 1,180,339,239**	**$ 1,340,710,107**
12	Bundled Retail Sales [kWh]	70,616,552,902	72,964,152,898	74,994,454,104	78,863,139,433	79,505,151,004	80,956,160,306	78,048,183,506	75,141,421,957	73,777,490,034
13	**Incremental Rate Impact** [cents/kWh]	**$ 1.28**	**$ 1.32**	**$ 1.29**	**$ 1.18**	**$ 1.23**	**$ 1.41**	**$ 1.33**	**$ 1.57**	**$ 1.82**

Table 2 (Forecast Costs)

		Forecasted Future Expenditures on RPS-Eligible Procurement and Generation Costs								
1	**Executed But Not CPUC-Approved RPS-Eligible Contracts and Generation Cost**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
2	Biogas	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
3	Biomass	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
4	Geothermal			$ -	$ -	$ -	$ -	$ -	$ -	$ -
5	Small Hydro	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
6	Solar PV									
7	Solar Thermal	$ -	$ -	$ -						
8	Wind	$ -	$ -	$ -	$ -	$ -	$ -	$ -		
9	UOG Small Hydro	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
10	UOG Solar	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
11	**Total Executed But Not CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 2 through 10]									
12	Bundled Retail Sales [kWh]					78,028,000,000	79,719,000,000	81,223,000,000	83,168,000,000	85,241,000,000
13	**Incremental Rate Impact** [cents/kWh]									
14	**CPUC-Approved RPS-Eligible Contracts (Incl. RAM/FIT/PV Contracts) and Generation Cost**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
15	Biogas									
16	Biomass		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
17	Geothermal									
18	Small Hydro									
19	Solar PV									
20	Solar Thermal									
21	Wind									
22	UOG Small Hydro									
23	UOG Solar									
24	**Total CPUC-Approved RPS-Eligible Procurement and Generation Cost** [Sum of Rows 15 through 23]									
25	Bundled Retail Sales [kWh]					78,028,000,000	79,719,000,000	81,223,000,000	83,168,000,000	85,241,000,000
26	**Incremental Rate Impact** [cents/kWh]									
27	**Total Incremental Rate Impact (row 13 + row 26)** [cents/kWh]									

Joint IOU Assumption Guidelines for Table Input	
Table 1 Items	**Actual**
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
Table 2 Items	**Forecast**
Rows 2 -10 and 15-23	Forecast begins on 1/1/2012 • UOG Small Hydro is annualized capital cost plus 2011 O&M escalated at 5% annually • UOG Solar is LCOE multiplied by actual generation in each year
Rows 12 and 25	IOU's most current bundled retail sales forecast
Rows 13 and 26	Total Cost / Bundled Retail Sales