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PORTFOLIO  
STANDARD  
PROCUREMENT  
VERIFICATION  
REPORT**

**STAFF DRAFT REPORT**

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Arnold Schwarzenegger, Governor

# CALIFORNIA ENERGY COMMISSION

Drake Johnson  
***Acting Office Manager***  
*Renewable Energy Office*

Heather Raitt  
***RPS Lead***

Valerie Hall  
***Deputy Director***  
**EFFICIENCY, RENEWABLES  
AND DEMAND ANALYSIS  
DIVISION**

B.B. Blevins  
***Executive Director***

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# SECTION 1: INTRODUCTION

The California Renewables Portfolio Standard (RPS) was established by Senate Bill 1078 (Sher, Chapter 516, Statutes of 2002) and calls for the state's investor-owned utilities (IOUs), electric service providers (ESPs), and community choice aggregators (CCAs) to meet 20 percent of their electricity load with eligible sources of renewable energy by 2017. In creating the RPS, the Legislature underscored the importance of increasing the diversity, reliability, public health and environmental benefits of the energy mix. To reach this target, each obligated load-serving entity must increase the percentage of its load served by renewable energy by at least 1 percent annually. The state energy agencies have committed to accelerating this goal to achieve the 20 percent target by 2010.

The Energy Commission intends to annually report and transmit its findings on the amount of renewable energy procured each year to the California Public Utilities Commission (CPUC) in its *RPS Procurement Verification Report (Verification Report)*. Further, the Energy Commission intends to apply the statutory requirements and the CPUC's rules to identify how much of the procurement qualifies towards each entity's baseline, incremental procurement target, and annual procurement target. This first *Verification Report* covers the 2004 calendar year and includes some data from 2001 through 2004, where applicable.

There are limitations to this interim RPS procurement verification analysis that should be noted. The robustness of the current verification system is limited by the universe of specific purchases that the RPS-procurement is checked against, and by the quality of the data.

## Report Organization

This report is organized into five sections. Section 1 is the introduction, followed by Section 2, which provides the Interim Tracking System methodology. Section 3 discusses the methodology and results for incremental geothermal facilities. Section 4 provides the procurement verification findings across utilities and fuel types. Lastly, Section 5 discusses the limitations of the current tracking system.

## Purpose and Scope of the Report

This *RPS Procurement Verification Report* transmits the Energy Commission's RPS procurement verification findings for the previous calendar year to the CPUC. The purpose of the report is to:

- Verify RPS-eligibility of the renewable energy facilities from which each IOU procured energy.
- Verify, to the extent possible, the amount of energy procured by each IOU from each RPS-eligible facility.

- Verify, to the extent possible, that RPS procurement exclusively serves California's RPS and does not support another renewable energy market claim.
- Verify that renewable facilities located out-of-state satisfy the Energy Commission's RPS energy delivery requirements.
- Apply statutory requirements to identify baseline procurement and apply the CPUC's rules, to the extent possible, to identify baseline, incremental procurement, and annual procurement.
- Quantify the amount of incremental geothermal energy.
- Compare the CPUC's annual procurement targets for each IOU with the Energy Commission's findings for how much procurement qualifies towards the targets.

SB 1078 requires the Energy Commission to design and implement a tracking system to verify compliance with the RPS program and ensure that renewable energy procured to meet California's RPS is counted only once and is not counted towards meeting other renewable energy retail claims.<sup>1</sup> Although the statute provides guidance on the purpose of the Energy Commission's tracking system, it is silent on how the Energy Commission should report the results of its tracking to the CPUC. The Energy Commission intends to develop and adopt an annual RPS Verification Report to meet the statutory requirements for RPS accounting and verification and transmit the report to the CPUC.

SB 1078 also requires the Energy Commission to certify renewable generating facilities as eligible for California's RPS and to implement RPS delivery requirements.<sup>2</sup> In 2004, the Energy Commission adopted eligibility criteria and a certification process in its *Renewables Portfolio Standard Eligibility Guidebook*.<sup>3</sup> The eligibility criteria include qualifications by technology size, fuel type, and initial commercial operation date.

The CPUC also has important roles in monitoring and verifying RPS compliance. For example, the CPUC is responsible for:

- Establishing each IOU's initial baseline.<sup>4</sup>

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<sup>1</sup> Public Utilities Code Section 399.13(b) requires the Energy Commission to "...design and implement an accounting system to verify compliance with the renewable portfolio standard by retail sellers, to ensure that renewable energy output is counted only once for the purpose of meeting the renewables portfolio standard of this state or any other state, and for verifying retail product claims in this state or any other state."

<sup>2</sup> Generation from an in-state or out-of-state facility, must be delivered to an in-state market hub or in-state substation location within the California ISO control area of the Western Electric Coordinating Council's transmission system.

<sup>3</sup> California Energy Commission, *Renewables Portfolio Standard Eligibility Guidebook*, CEC-500-04-002F1. The Energy Commission originally adopted the *Guidebook* in April 2004 (updated August 2004) to establish the procedures for generating facilities to become certified as eligible for the RPS; IOUs may also certify generating facilities on their behalf.

<sup>4</sup> Public Utilities Code Section 399.15(a)(3).

- Implementing the annual procurement target for each IOU.<sup>5</sup>
- Approving or rejecting contracts executed to procure RPS-eligible electricity.
- Determining if the IOU is in compliance with the RPS consistent with the CPUC's flexible rule for compliance.<sup>6</sup>
- Imposing penalties for non-compliance. The CPUC adopted penalties for non-compliance with the RPS at a level of 5 cents per kWh, limited to \$25 million annually per IOU.<sup>7</sup>

The CPUC is further refining its reporting requirements and compliance determinations. The results of these efforts are expected to be presented in CPUC decisions in 2006. CPUC decisions, based on a more detailed record in the CPUC proceeding, may differ in some respects from the summary descriptions of CPUC activities described here.

## **Renewables Portfolio Standard Procurement Targets**

The CPUC sets annual procurement targets (APTs) for the amount of RPS-eligible energy each utility must procure to meet the statutory requirement that it increase its renewable procurement by at least 1 percent of retail sales per year to serve 20 percent of its retail sales with RPS-eligible energy.<sup>8</sup> The APT is mandatory and consists of two components:

1. The baseline represents the amount of renewable generation a utility must retain in its portfolio to continue to satisfy its obligations under the RPS targets of previous years. The baseline is the retail sellers' RPS-eligible procurement in year 2001, and is adjusted to include renewable procurement in subsequent years.
2. The incremental procurement target (IPT) is defined as at least 1 percent of the previous year's total retail electrical sales, including power sold to a utility's customers from its Department of Water Resources contracts.<sup>9</sup>

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<sup>5</sup> Public Utilities Code Section 399.15(b) establishes a 20 percent target by 2017, but this target has been accelerated to 2010 by the Energy Action Plan and the Integrated Energy Policy Report.

<sup>6</sup> Public Utilities Code Section 399.14(a)(2)(C).

<sup>7</sup> CPUC, Decision 03-06-071, Rulemaking 04-04-026, *Order Initiating Implementation of the Senate Bill 1078 Renewables Portfolio Standard Program*, June 19, 2003.

<sup>8</sup> Subject to CPUC rules for flexible compliance (Decision 03-06-071, Rulemaking 04-04-026, *Order Initiating Implementation of the Senate Bill 1078 Renewables Portfolio Standard Program*, June 19, 2003.).

<sup>9</sup> CPUC, "Order Instituting Rulemaking to Implement *the California Renewables Portfolio Standard Program*, Rulemaking 04-04-026, April 22, 2004.

The APT is the sum of the baseline in the previous year plus the current year's IPT.<sup>10</sup> Each IOU must meet its APT subject to flexible compliance provisions and availability of supplemental energy payments.

SB 1078 defines RPS-eligible energy procured in 2001 as the original baseline year for the California RPS. In accounting for RPS-eligible procurement, it is necessary to categorize specific purchases as accounting towards either the IPT or baseline. Applying CPUC rules, this accounting is dependent on both static and dynamic information.

- Static information: The characteristics of the renewable energy facility determine if it may qualify for the IPT or if it is restricted to baseline and adjusting the baseline. Certain resources are restricted by statute to only count towards baseline or adjusting the baseline: geothermal facilities that originally became commercially operational before September 26, 1996; small-hydro facilities that became commercially operational prior to September 12, 2002, and were owned or whose generation was procured by an IOU as of this date; and eligible municipal solid waste combustion facilities located in Stanislaus County and commercially operational prior to September 26, 1996. The generation from these facilities cannot count towards the IPT.
- Dynamic information: The amount of time the retail seller has been procuring energy from the RPS-eligible facility can be the determining factor in accounting for procurement as baseline or IPT. RPS-eligible energy initially under contract with a retail seller in 2003 or later is eligible to count towards the IPT in the first year the utility procures energy from the facility. In the second and subsequent years, however, procurement from that facility counts towards the retail seller's baseline.

The Energy Commission must consider both the dynamic procurement data and the static certification data to account for procurement towards the baseline or IPT.

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<sup>10</sup> CPUC, Decision 04-06-014, Rulemaking 04-04-026, June 9, 2004.

## SECTION 2: METHODOLOGY

The verification methodology used for this report is termed “interim” because the Energy Commission is developing a more robust electronic system to verify the RPS for renewable energy procured in 2007 and thereafter. At that time, the Interim Tracking System applied to the analysis for this report will be replaced by a regional electronic tracking system, the Western Renewable Energy Generation Information System (WREGIS). Once it is operational, WREGIS will serve as the tracking and verification system for the California RPS, and the Energy Commission will produce its *Verification Report* with data produced from the WREGIS system.

### Interim Tracking System

To track and verify the IOUs’ RPS procurement, the Energy Commission applied the approach used since 1998 to develop the annual *Reconciliation of Retailer Claims* Report for the Power Source Disclosure Program.<sup>11</sup> The first step ensured that all RPS-procurement was energy generated by a certified RPS-eligible facility. Next, staff compared the amount of RPS-eligible energy procured by IOUs with the total amount of energy generated to ensure that the amount procured did not exceed the amount generated. For example, if two or more IOUs procured energy from the same facility, staff compared the cumulative amount of energy procured from that facility with the amount of energy generated by that facility, using spreadsheet databases. Sources of procurement and generation data are summarized below.

Next, to the extent possible, staff determined that RPS-eligible energy procured by the IOUs was counted only once in California or any other state. Staff’s verification that RPS-eligible energy procured from an out-of-state generator satisfied the Energy Commission’s delivery requirements is described in Section 4.

### *Sources of Procurement Data*

The Energy Commission received data from the IOUs on the amount of RPS-eligible energy procured in 2004. Pacific Gas and Electric (PG&E), Southern California Edison (SCE), and San Diego Gas and Electric (SDG&E) filed CEC-RPS-Track forms with the Energy Commission to report their 2004 RPS procurement. Although the 2004 tracking forms were due on May 2, 2005, PG&E filed its 2004 CEC-RPS-Track form on May 3, 2005, while SCE filed its form on July 8, 2005, and SDG&E filed its form on June 13, 2005.

Appendix A of the Energy Commission Staff Report, “Implementing California’s Loading Order for Electricity Resources” (Publication # CEC-400-2005-043) derives procurement and sales information for the IOUs from filings they made to the CPUC. For example, the IOUs reported their renewable procurement and retail sales for 2001 in the “Report to the California Public Utilities Commission: Utility Procurement

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<sup>11</sup> SB 1305 (Sher, Chapter 796, Statutes of 1997) requires retail suppliers of electricity to disclose to consumers “accurate, reliable and simple to understand information on the sources of energy that are (being) used....” (Public Utilities Code Section 398.1(b)).



of Renewable Energy-2001 and 2002" which was filed to the CPUC under Rulemaking 01-10-024. For 2003 and 2004, renewable procurement and retail sales were reported in the IOU APT compliance reports filed with the CPUC in Rulemaking 04-04-026. This report presents verification results for procurement reported in the CEC-RPS-Track forms rather than the aggregated data in the IOUs' compliance filings submitted to the CPUC. The data in the RPS-Track forms provides the details necessary for this analysis. This report compares the data reported in the CEC-RPS-Track forms with data in the compliance filings submitted by PG&E, SCE, and SDG&E to the CPUC on March 1, 2005.

In their CEC-RPS-Track filings, the IOUs reported how much energy they procured in calendar year 2004, disaggregated by RPS-certified facility and by month. In this report, a procurement "claim" or "specific purchase" refers to the amount of energy an IOU procured from a specific renewable facility. The information presented in each of its IOU's CEC-RPS-Track forms and the available generation totals for each facility by data source is included in the appendix to this report. The IOUs also reported their retail sales in the CEC-RPS-Track form.

### ***Sources of Generation Data***

The Energy Commission staff collected generation data from various sources to verify that procurement was substantiated by generation data. Staff reviewed generation data from the U.S. Energy Information Administration (EIA) and generation data reported to the Energy Commission as described below. In most cases, the Energy Commission's facility data was compiled from more than one source, consistent with the approach used for the *Reconciliation of Retailer Claims Report*. Staff compared the generation reported for each RPS-eligible facility in the various data sources and used the highest generation data for its analysis, which is also consistent with the *Reconciliation of Retailer Claims Report* methodology.

Self reported data were collected from the EIA's Web site, which provides monthly generation from facilities with a capacity greater than 1 megawatt (MW).<sup>12</sup> The Energy Commission also collects data from owners of electric power plants larger than 1 MW located in California. Data collected includes the plant's nameplate capacity, fuel type, generation, and fuel usage. Owners of plants with a nameplate capacity of 1—10 MWs must report annually, while owners of generating facilities larger than 10 MWs must report quarterly.

The staff also reviewed data collected by the Energy Commission from generating facilities registered and eligible for funding through either its Existing or New Renewable Facilities Programs as well as generation data from the Public Interest Energy Research Program's (PIER) *Wind Performance Report Summary*. Since 1985, operators of wind plants with a capacity greater than 100 kW that sell electricity to a power purchaser have submitted the annual generation output of their

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<sup>12</sup> 2004 generation data from the Energy Information Administration can be downloaded at [http://www.eia.doe.gov/cneaf/electricity/page/eia906\\_920.html](http://www.eia.doe.gov/cneaf/electricity/page/eia906_920.html).

facilities to the Energy Commission. Wind generation data from 1985 through 2003 is available on the electronic Wind Performance Reporting System at <http://wprs.ucdavis.edu/>; however, 2004 wind generation data used for this report has not yet been posted on that Web site.

### ***Verification that RPS Procurement is Counted Only Once***

The Energy Commission also verified, to the extent possible, that RPS procurement was counted once and only once in California or any other state. Staff cross-referenced RPS procurement data with data from the Energy Commission's Power Source Disclosure Program which prepares an annual report comparing the source of power that retailers have disclosed to their customers and the actual energy generated for consumption in California. Comparing RPS procurement with procurement reported to the Power Source Disclosure Program is the approach used to verify that the IOUs' RPS claims did not overlap claims made by other retail sellers in California, including municipal utilities and ESPs.<sup>13</sup> If a retail seller claims specific purchases on its Power Content Label, then the seller is required to submit an Annual Report to the Energy Commission that lists the generating facilities from which it procured electric generation for the previous year.<sup>14</sup>

The Power Source Disclosure Program received and reviewed Annual Reports from 26 retail providers and 2 electricity wholesalers for 2004. Data from the Annual Reports included procurement from 739 facilities, including 449 that were certified as RPS-eligible or were "registered".<sup>15</sup> The analysis included Annual Reports submitted by PG&E and SCE. SDG&E was not required to submit an Annual Report for 2004, but will need to for its 2005 retail sales and plans to submit an Annual Report for 2005 activity in 2006.<sup>16</sup>

Additionally, the Energy Commission verified, to the extent possible, that the renewable facilities claimed by the California IOUs were not claimed by retail providers in other states. In administering the Power Source Disclosure Program,

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<sup>13</sup> This data was checked against Annual Reports filed by retail sellers of electricity under the Power Source Disclosure Program pursuant to SB 1305 (Sher, Chapter 796, Statutes of 1997).

<sup>14</sup> Specific purchases for the purposes of the Power Source Disclosure Program refer to wholesale power purchases that the retailer can trace to specific generators, and thereby claim that the electricity offered for sale to retail customers is a particular fuel type.

<sup>15</sup> Any facility that does not meet the RPS or SEP eligibility requirements may apply to the Energy Commission for "registration" as a Renewable Supplier if it generates electricity from one or more of the following sources consistent with definitions in the *Overall Program Guidebook*: biomass, biodiesel, fuel cells using renewable fuels, digester gas, geothermal, landfill gas, municipal solid waste, ocean wave, ocean thermal, tidal current, photovoltaic, small hydroelectric, solar thermal, or wind. The facility must also report the type and percent of fossil fuel used, if applicable.

<sup>16</sup> The following entities submitted 2004 Annual Reports to the Power Source Disclosure Program: 3Phases Energy Services, Commonwealth Energy Corporation, Green Mountain Energy, Anaheim Public Utility District; City of Alameda, Azusa, Biggs, Burbank, Healdsburg, Lodi, Lompoc, Needles, Redding, Riverside, Roseville, Ukiah; Los Angeles Department of Water and Power; Merced, Modesto, and Turlock Irrigation District; Palo Alto Electric Utility; Sacramento Municipal Utility District; Silicon Valley Power; PG&E; SCE; Surprise Valley Electrification Association; Bonneville Power Administration; and Northern California Power Authority.

the Energy Commission collaborated with state agencies in Oregon and Washington to develop an energy information/tracking system funded by a U.S. Department of Energy grant. This system enables the participating states to determine if generation is claimed in more than one state. Using this system, representatives from the State of Washington reported that no retail providers in Washington or Oregon claimed renewable generation from California renewable facilities. Data were not available from other states.

### ***Identifying Incremental Procurement and Baseline***

In their reports to the Energy Commission, the IOUs were not asked to delineate procurement that they allocate towards baseline versus IPT. For verification efforts in future years, staff anticipates revising the CEC-RPS-Track reporting forms such that the utilities will identify what procurement they intend to count towards the baseline or IPT. With the revised forms, the Energy Commission would verify the IOUs' accounting but not attempt to reconstruct it.

In some cases, statutory requirements restrict generation from certain facilities as counting only towards the baseline or adjusting the baseline. For this report, staff identified procurement from facilities meeting the criteria shown below and allocated it accordingly.

- Geothermal originally operating prior to Sept. 26, 1996.
- Hydroelectric owned by an IOU as of September 12, 2002, or hydro-electric generation procured by an IOU as of September 12, 2002.
- MSW combustion for facilities located in Stanislaus County and operating prior to September 26, 1996.
- Biomass originally on-line prior to January 1, 2002.
- Biodiesel if it uses biomass that is restricted to the baseline.

To identify the remainder of the baseline, the Energy Commission staff reviewed the IOUs' filings reporting the amount of energy procured from each renewable facility in 2001. If the IOU procured electricity from a facility in 2001, procurement from that facility in 2003 and 2004 was allocated as counting towards the IOU's baseline. An exception would be if a facility repowered. In that case, the facility could recertify with the Energy Commission and the energy procured could count towards the IOU's IPT.

In calculating the percentage of retail sales for the RPS for 2001, the 2001 baseline was divided into the IOU's retail sales in 2001. Staff calculated the 2003 percent of retail sales that are RPS-eligible by dividing 2003 RPS procurement by 2001 retail sales. To calculate the 2004 percent of retail sales, 2004 procurement is divided into the 2003 retail sales totals. This approach is consistent with the CPUC Decision 02-10-062 in which the 2003 IPT is calculated based on 1 percent of 2001 retail sales for the IOUs.

All of the 230 RPS purchases claimed by PG&E came from RPS certified facilities. Of the 185 renewable purchases claimed by SCE, 183 came from certified RPS facilities, and of the 20 RPS purchases claimed by SDG&E, 16 came from certified RPS facilities. Staff is working with the parties to resolve discrepancies and notes there was some quantity procured from facilities that have not yet been certified.

For simplicity, staff did not track annual fluctuations in procurement from specific facilities. The total contracted amount was treated in aggregate as counting towards the IOU's baseline or IPT. If, for example, a plant was not operational for part of the year and its sales to the IOU dropped, that portion of the IOU's baseline would decrease. However, if the facility sold more electricity to the IOU in the following year, the total amount the IOU procured from that facility would still be allocated to the IOU's baseline, unless the facility was repowered.

Also, staff assumed that the first 12 months of procurement from an RPS-eligible facility may be allocated towards an IOU's IPT, assuming the facility was not under contract with the utility in 2001 and the facility is not subject to statutory limitations restricting it to the baseline. Generally speaking, after the first 12 months of operation, procurement counts towards baseline. The example below provide a more detailed discussion for a facility that is not restricted in statute as only being eligible for the baseline or adjusting the baseline as described earlier in the report.

- For example, if deliveries under contract begin in June 2006, then procurement in June 2006 through May 2007 may count towards the utility's IPT. Beginning in June 2007, however, procurement counts towards baseline. If a contract expires and is renegotiated with the same IOU (or if the generator successfully competes in the same IOU's solicitation), then the procurement from that generator would remain as baseline.
- If the contract ended and the generator executed a contract with a different IOU, the second IOU could count procurement in the first 12 months towards its IPT, and the generation would no longer count towards the first IOU's baseline, assuming there were no sales to the first IOU.
- If the generator repowered the facility, the first 12 months of procurement from the repowered facility could count towards the IPT. In month 13, the procurement would then be allocated to baseline.

## **Long-Term Verification**

To better meet its statutory requirements for RPS verification, the Energy Commission, together with the Western Governors' Association, is developing a regional electronic tracking system called WREGIS, the acronym for the Western Renewable Energy Generation Information System. WREGIS will electronically track renewable energy certificates representing renewable energy generation and will replace the Interim Tracking System described above and used for this report.

The WREGIS system will create an electronic certificate for each megawatt-hour (MWh) of renewable energy generated. The WREGIS Certificate will be tagged as California RPS-Eligible or California RPS-SEP-Eligible, as applicable. WREGIS will function like a banking system, with WREGIS Certificates deposited into a generator's "account." WREGIS Certificates can be transferred between parties but can only reside in one party's account at a time, thereby protecting against double-counting of renewable energy generation.

Renewable generators and retail sellers from the Western U.S., Western Canada, and parts of Mexico may participate in WREGIS. As a regional system, WREGIS is designed to verify that any RPS-eligible generation is counted once and only once in California and throughout the geographic area covered by the Western Electricity Coordinating Council (WECC).<sup>17</sup>

The Energy Commission expects WREGIS to begin operation in early 2007. Once WREGIS is operational, the Energy Commission will require renewable suppliers and IOUs to participate in WREGIS as part of their RPS compliance. The Energy Commission envisions that retail sellers will provide reports generated via WREGIS to meet the reporting requirements currently satisfied with the CEC-RPS-Track forms. The WREGIS reports will replace the need for cross references with other databases to ensure that the RPS-eligible energy is counted only once. WREGIS data will be checked with NERC tag data to verify delivery into California from out-of-state renewable generators.

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<sup>17</sup> The WECC, one of four regional organizations that oversee the operation of the nation's bulk power grid and among the ten regional councils of the North American Electric Reliability Council (NERC), provides coordination in operating and planning the electricity system for the Western Interconnection. The Western Interconnection is the geographic area containing the synchronously operated electric transmission grid in the western part of North America, which includes parts of Montana, Nebraska, New Mexico, South Dakota, Texas, Wyoming, and Mexico and all of Arizona, California, Colorado, Idaho, Nevada, Oregon, Utah, Washington, and the Canadian Provinces of British Columbia and Alberta.

## SECTION 3: INCREMENTAL GEOTHERMAL

Using criteria outlined in the *Renewables Portfolio Standard Eligibility Guidebook (Guidebook)*, the Energy Commission's Renewable Energy Program approved certification of incremental geothermal capacity for nine Calpine Geysers facilities. Because the Calpine Geysers facilities began commercial operations prior to September 26, 1996, generation from RPS-certified Geysers facilities certified as geothermal is only eligible to count towards the RPS baseline or adjustment to the baseline.<sup>18</sup> Capacity from these facilities certified as incremental geothermal, however, is not restricted to counting only towards an IOU's baseline and may qualify towards the IOU's IPT.

For 2004, the Energy Commission approved a total of 113 MW of incremental geothermal capacity at the nine Calpine Geysers facilities. The Energy Commission denied 6 MW of the 119 MW for which Calpine applied for incremental geothermal certification. The remaining 770 MW of capacity from the Calpine Geysers facilities were certified as restricted to baseline or baseline adjustment.

For each of Calpine's nine facilities, part of the capacity is certified as incremental geothermal, and the remainder is geothermal. Allocating generation from one facility to two different eligibility categories adds a new challenge to the accounting system. The methodology used to account for generation from the Calpine Geysers facilities and staff's draft results are discussed below.

This section provides staff's estimate for the amount of procurement that is RPS-certified as "incremental geothermal." The results of this analysis are reflected in staff's estimate of PG&E's and SCE's procurement that qualifies as IPT, but does not make a determination on compliance with the IPT.<sup>19</sup>

### Methodology

The Energy Commission estimated the amount of incremental geothermal electricity generated from each facility certified as incremental geothermal by dividing the capacity certified as eligible for incremental geothermal for 2004 by the total capacity for each facility.<sup>20</sup> The resulting percentage was then multiplied by the available generation total from that facility (in MWh). For example, Calpine Geothermal Unit 5/6 has a total capacity of 110 MW, with 6.5 MW certified incremental geothermal. Applying this methodology, 6 percent of the generation from Unit 5/6 is attributable to incremental geothermal (6.5 divided by 110).

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<sup>18</sup> Pursuant to Public Utilities Code Section 399.12.

<sup>19</sup> On August 26, 2005, SCE filed an application for rehearing and a petition for modification of CPUC Decision 05-07-039 (Rulemaking 04-04-026) with regards to SCE's ability to count procurement from the Calpine Geysers towards their incremental procurement target.

<sup>20</sup> The facility's generating capacity total was reported in the facility's CEC-RPS-1 Application for Certification California Renewables Portfolio Standard Program.

## Results

PG&E procured generation from two facilities with incremental geothermal capacity in 2004 (Table 1). The energy was generated at Units 13 and 20 of the Calpine Geysers. The Energy Commission compared the procurement from both facilities with available generation data and confirmed that the quantity generated exceeded the amount procured by PG&E (this check is intended to ensure that the amount procured does not exceed the amount generated).

As shown in Table 1, PG&E procured a total of 667,035 MWh from Calpine Geysers Units 13 and 20 in 2004, with 374,152 MWh from Calpine Geysers Unit 13, and 292,883 MWh from Calpine Geysers Unit 20. Of the 667,035 MWh procured by PG&E from Calpine Geysers Units 13 and 20, the Energy Commission calculates that 153,462 MWh qualify as incremental geothermal and is not restricted to baseline or adjusting the baseline. This estimate assumes that all of the incremental geothermal energy generated from these facilities was sold to PG&E and not allocated to a separate customer (since total generation from these facilities exceeds the amount PG&E procured, the data indicate that some of the electricity produced was sold to a separate entity).

Table 1 shows staff's estimate for PG&E's procurement of incremental geothermal from each Calpine geothermal facility in 2004. The incremental geothermal output from these facilities totals 153,462 MWh.

**Table 1: Estimated PG&E 2004 Incremental Geothermal Procurement**

Calpine Geothermal Facility	2004 Facility Capacity (MW) <sup>1</sup>	2004 Eligible Incremental Geothermal Capacity (MW) <sup>2</sup>	2004 Percent of Capacity Certified as Incremental Geothermal <sup>3</sup>	2004 Total Generation (MWh) <sup>4</sup>	2004 Estimated Incremental Geothermal Procured <sup>5</sup> (MWh)	2004 Total Procurement (MWh) <sup>6</sup>
Unit 13	102	11	10.8%	512,599	55,280	374,152
Unit 20	84	21	25%	392,727	98,182	292,883
<b>Total</b>	<b>186</b>	<b>32</b>	<b>NA</b>	<b>905,326</b>	<b>153,462</b>	<b>667,035</b>
<sup>1</sup> Data from Calpine's application to the Energy Commission for certification as RPS-eligible. <sup>2</sup> Amount of capacity that the Energy Commission certified as "incremental geothermal" capacity. <sup>3</sup> Eligible incremental geothermal capacity divided by the generating capacity. <sup>4</sup> Reported by the generator to the Energy Commission. <sup>5</sup> Estimated amount of incremental generation available for procurement in 2004 (total generation x percent of capacity certified as incremental geothermal). Staff assumed that all of the incremental geothermal generation produced from this facility was sold to PG&E by Calpine. <sup>6</sup> Reported by PG&E to the Energy Commission on the RPS-Track form.						

Staff also estimated the amount of SCE's procurement that qualifies as incremental geothermal, as shown in Table 2. SCE reported procurement of 1,783,008 MWh of

geothermal electricity from the Calpine Geysers in 2004. Table 2 shows the amount of generation SCE procured from the following Calpine Geysers facilities: Unit 3, Unit 5/6, Unit 7/8, Unit 11, Unit 12, Unit 17, and Unit 18. Calpine Geothermal Unit 11 is a repowered facility, and consequently the 28,679 MWh that SCE procured from Unit 11 is not restricted to baseline or adjusting the baseline.

SCE's purchases from Unit 3, Unit 5/6, Unit 7/8, Unit 12, Unit 17, and Unit 18 represent a mix of energy that qualifies as either incremental geothermal or baseline/baseline adjustment. Of the 1,783,008 MWh procured by SCE from the Calpine Geysers, staff estimates that 352,517MWh qualifies as incremental geothermal.

Since the total amount generated by these facilities in 2004 (3,262,649 MWh) was greater than the total procured by SCE, this estimate assumes that all the incremental geothermal (352,517 MWh) was procured by SCE, but 1,102,252 MWh of the non-incremental geothermal generated by these units in 2004, was not procured by SCE.

**Table 2: Estimated SCE's 2004 Incremental Geothermal Procurement**

Calpine Geothermal Facility	2004 Facility Capacity (MW) <sup>1</sup>	2004 Eligible Incremental Geothermal Capacity (MW) <sup>2</sup>	2004 Percent of Capacity Certified as Incremental Geothermal <sup>3</sup>	2004 Total Generation (MWh) <sup>4</sup>	2004 Estimated Incremental Geothermal Procured <sup>5</sup> (MWh)	2004 Total Procurement (MWh) <sup>6</sup>
Unit 3	78	7.6	9.7%	307,717	29,983	219,897
Unit 5/6	110	6.5	5.9%	626,352	37,012	445,897
Unit 7/8	110	15.6	14.2%	548,289	77,757	392,044
Unit 11 <sup>7</sup>	74.40	0	0.0%	508,453	0	28,679
Unit 12	77	8.6	11.2%	443,259	49,507	316,407
Unit 17	84	21.7	25.8%	432,014	111,604	311,178
Unit 18	119	14	11.8%	396,565	46,655	68,906
<b>Total</b>	<b>652</b>	<b>74</b>	<b>NA</b>	<b>3,262,649</b>	<b>352,517</b>	<b>1,783,008</b>

<sup>1</sup> Date from Calpine's application to the Energy Commission for certification as RPS-eligible.

<sup>2</sup> Amount of capacity that the Energy Commission certified as "incremental geothermal" capacity.

<sup>3</sup> Eligible incremental geothermal capacity divided by the generating capacity.

<sup>4</sup> Reported by the generator to the Energy Commission.

<sup>5</sup> Estimated amount of incremental generation available for procurement in 2004 (total generation x percent of capacity certified as incremental geothermal). Staff assumed that all of the incremental geothermal generation produced from this facility was sold to SCE by Calpine.

<sup>6</sup> Reported by SCE to the Energy Commission on the RPS-Track form.

<sup>7</sup> Calpine Geothermal Unit 11 is a repowered facility. Consequently, electricity procured from Unit 11 is not restricted to baseline or adjusting the baseline.



## SECTION 4: PROCUREMENT VERIFICATION FINDINGS

This section presents findings by first comparing the results of staff's analysis of procurement that qualifies as IPT and APT with the IOUs' targets for 2004. The results are presented for energy and percent retail sales for 2001, 2003, and 2004. Next, each IOU's procurement is shown by fuel type for the APT in general and also for procurement that staff accounted for as eligible for IPT. Lastly, each IOU's procurement from new and repowered facilities is identified for 2003 and 2004.

The findings do not include 2002 because 2003 was the first year for which the CPUC set procurement targets. However, 2001 is included because it is considered the first baseline year for the RPS. The Energy Commission staff allocated procurement in 2003 and 2004 as either baseline or eligible for the IPT using the methodology and assumptions described earlier, with APT being the sum of the baseline and IPT. The information in Tables 3 through 13 showing IOU-specific procurement was derived from the CEC-RPS-Track filings submitted to the Energy Commission for the years shown.

### Comparison of Procurement and Targets

Table 3 lists the IOUs' 2004 APT and IPT and the Energy Commission's estimates for the amount of procurement qualifying for each target.

**Table 3: IOU Progress in Meeting the RPS for 2004 (MWh)**

Utility	Annual Procurement Target (APT)	Procurement Towards Meeting APT Claimed on CEC-RPS-Track	Total Procured in Excess of APT <sup>1</sup>	Incremental Procurement Target (IPT)	Estimated Procurement that Meets IPT Criteria	Total Procured in Excess of IPT <sup>2</sup>
PG&E	9,474,755	8,590,682	(884,073)	710,990	26,183	(684,807)
SCE	12,736,000	13,247,500	511,500	706,000	79,136	(626,864)
SDG&E	423,336	677,976	254,640	150,440	40,388	(110,052)

<sup>1</sup> Negative numbers indicate that the IOU procured less than their APT.

<sup>2</sup> Negative numbers indicate that the IOU procured less than their IPT.

Tables 4 through 12 show total IOU renewable procurement for 2001, 2003, and 2004. The data were derived from the CEC-RPS-Track filings submitted to the Energy Commission for the years shown.

### *Pacific Gas and Electric*

Tables 4 through 6 show PG&E's RPS-eligible procurement and its progress in meeting its IPT and APT for 2003 and 2004. Table 4 shows the amount of RPS-eligible electricity PG&E procured in terms of energy and percent retail sales, reflecting the staff's analysis in allocating PG&E's procurement as eligible for the

baseline or eligible for the IPT. Table 5 shows the procurement targets set for PG&E by the CPUC. Table 6 shows the staff's analysis of the amount of RPS-eligible energy PG&E procured per year in comparison with the IOU's RPS targets.

**Table 4: PG&E RPS Procurement<sup>a</sup>**

	RPS Procurement for PG&E (MWh)			Percent of Retail Sales		
	2001	2003	2004	2001	2003	2004
<b>Baseline</b>	6,719,480	8,628,757	8,590,682	8.9%	11.5%	12.1%
<b>Incremental Procurement</b>	not applicable	199,308	0 <sup>c</sup>	Not Applicable	0.2%	0.0%
<b>TOTAL</b>	6,719,480	8,828,065 <sup>b</sup>	8,590,682	8.9%	11.7%	12.1%
<b>Retail Sales</b>	75,320,000	71,099,363	73,616,302	NA	NA	NA

<sup>a</sup> Data derived from PG&E's RPS-Track submittals to the Energy Commission.

<sup>b</sup> This includes 239,888 MWh of renewable procurement that is not itemized by generator. The 239,888 is included in the baseline total.

<sup>c</sup> The Energy Commission staff did not identify procurement that qualified for the IPT for 2004 in its review of PG&E's RPS-Track submittals. PG&E procured from the same facilities in 2003 and 2004, except that some facilities that sold to PG&E in 2003 did not do so in 2004.

**Table 5: PG&E RPS Procurement Targets\***

Target	2003 MWh	2004 MWh	2003 Percent of 2001 Retail Sales	2004 Percent of 2003 Retail Sales
<b>IPT</b>	753,200	710,994	1.00%	1.00%
<b>APT</b>	8,763,765	9,474,759	11.64%	13.33%

\*The CPUC adopted the 2004 targets in decision 04-06-014, R. 04-04-026 on June 9, 2004. The 2003 and 2004 IPTs and APTs appear in PG&E's March 1, 2005 Compliance Filing submitted to the CPUC under R. 04-04-026.

**Table 6: Difference between PG&E RPS Procurement and Targets**

Eligibility	2003 MWh	2004 MWh	2003 Percent Difference	2004 Percent Difference
<b>Qualifying APT Procurement</b>	8,828,065	8,590,682	-9.1%	-9.3%
<b>Qualifying IPT Procurement</b>	199,308	0	-73.5%	-100%

### ***Southern California Edison***

Tables 7 through 9 provide information on SCE's RPS-eligible procurement and its progress in meeting its IPT and APT for 2003 and 2004. Table 7 shows the amount of RPS-eligible electricity SCE procured in terms of energy and percent retail sales. The results reflect staff's analysis in allocating SCE's procurement as eligible for the baseline or eligible for the IPT. Table 8 shows the procurement targets that the CPUC set for SCE. Table 9 shows staff's analysis of the amount of RPS-eligible energy SCE procured per year in comparison with the IOU's RPS targets.

**Table 7: SCE RPS Procurement\***

	RPS Procurement for SCE (MWh)			Percent of Retail Sales		
	2001	2003	2004	2001	2003	2004
<b>Baseline</b>	11,363,533	12,336,390	13,168,364	15.2%	16.5%	18.7%
<b>Incremental Procurement</b>	Not Applicable	454,471	79,136	Not Applicable	0.6%	0.1%
<b>TOTAL</b>	11,363,533	12,790,861	13,247,500	15.2%	17.1%	18.8%
<b>Retail Sales</b>	74,806,895	70,617,000	72,963,394	NA	NA	NA

\* Data derived from SCE's RPS-Track submittals to the Energy Commission.

**Table 8: SCE RPS Procurement Targets\***

Target	2003 Procurement (MWh)	2004 Procurement (MWh)	2003 Percent of 2001 Retail Sales	2004 Percent of 2003 Retail Sales
<b>IPT</b>	748,069	706,170	1.0%	1.0%
<b>APT</b>	12,030,000	12,736,042	16.1%	18.0%

\*The CPUC adopted the 2004 targets in decision 04-06-014, R. 04-04-026 on June 9, 2004.

**Table 9: Difference between SCE RPS Procurement and Targets**

Eligibility	2003 Procurement (MWh)	2004 Procurement (MWh)	2003 Percent Difference	2004 Percent Difference
<b>Qualifying APT Procurement</b>	12,790,861	13,247,500	6.3%	4.0%
<b>Qualifying IPT Procurement</b>	454,471	79,136	-39.2%	-88.8 %

### ***San Diego Gas and Electric***

Tables 10 through 12 provide information on SDG&E's RPS-eligible procurement and its progress in meeting its IPT and APT for 2003 and 2004. Table 10 shows the amount of RPS-eligible electricity SDG&E procured in terms of energy and percent retail sales. The results reflect staff's analysis in allocating SDG&E's procurement as eligible for the baseline or eligible for the IPT. Table 11 shows the procurement targets that the CPUC set for SDG&E. Table 12 shows staff's analysis of the amount of RPS-eligible energy SDG&E procured per year in comparison with the IOU's RPS targets.

**Table 10: SDG&E RPS Procurement<sup>a</sup>**

	RPS Procurement for SDG&E (MWh)			Percent of Retail Sales		
	2001	2003	2004	2001	2003	2004
<b>Baseline</b>	145,760	144,439	553,494	1.0%	1.0%	3.7%
<b>Incremental Procurement</b>	not applicable	405,528	124,472 <sup>b</sup>	not applicable	2.7%	0.8%
<b>TOTAL</b>	145,760	549,967	677,966	1.0%	3.7%	4.5%
<b>Retail Sales</b>	14,998,806	15,043,865	15,811,591	NA	NA	NA

<sup>a</sup> The data are derived from SDG&E's RPS-Track submittals to the Energy Commission.

<sup>b</sup> SDG&E's Incremental Procurement 124,472 MWh includes 75,349 MWh procured from PPM Energy. In 2004, SDG&E procured 75,899 MWh from PPM Energy and it is estimated that 75,349 MWh of that total was generated by Mountain View III, which came online in December 2003. The remaining 550 MWh procured from PPM Energy in 2004 came from Phoenix Wind, which came online before 2002. The 550 MWh estimate comes from the amount that SDG&E claimed that was procured from PPM Energy in 2003. That 550 MWh was counted towards SDG&E's IPT for 2003.

**Table 11: SDG&E RPS Procurement Targets<sup>1</sup>**

Target	2003 Procurement (MWh)	2004 Procurement (MWh)	2003 Percent	2004 Percent
<b>IPT</b>	149,988 <sup>2</sup>	150,439	1%	1%
<b>APT</b>	295,748 <sup>3</sup>	423,336	2.0%	2.8%

<sup>1</sup>The CPUC adopted these targets in decision 04-06-014, R. 04-04-026 on June 9, 2004.

<sup>2</sup>In "Compliance Filing of San Diego Gas & Electric Company (U 902 E) Regarding Achievement of 2003 Renewable Portfolio Standard Annual Procurement Target" submitted to the CPUC under R.01-10-024, SDG&E reported that their APT was 149,988 MWh. This total is actually SDG&E's IPT for 2003 since it is 1 percent of SDG&E's 2001 sales which were 14,998,806 MWh.

<sup>3</sup>Based on Decision 04-06-014 under Rulemaking 04-04-026, SDG&E's 2003 APT is calculated as their 2001 sales of 145,760 MWh plus their 2003 IPT of 149,988 MWh which equals 295,748 MWh.

**Table 12: Difference Between SDG&E RPS Procurement and Targets**

Eligibility	2003 Procurement (MWh)	2004 Procurement (MWh)	2003 Percent Difference	2004 Percent Difference
<b>Qualifying APT Procurement</b>	549,967	677,966	86.0%%	60.1%
<b>Qualifying IPT Procurement</b>	405,528	124,472	170%	-17.3%

## RPS-Eligible Procurement by Fuel Type

SB 1078 notes that one of the purposes of the RPS is to "increase the diversity" of the energy mix. Because of the importance of this goal, Table 13 shows the 2004

fuel mix of the combined RPS procurement for PG&E, SCE, and SDG&E. The fuel mix per utility is shown in Tables 14 through 16. As indicated, geothermal dominates the overall resource mix (primarily from SCE procurement), totaling more generation than the other fuel types combined for all IOUs. For PG&E and SDG&E, procurement from biomass fueled facilities is slightly higher than from other fuel types.

**Table 13: 2004 RPS Procurement by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	3,690,319
Biogas	1,190,911
<b><i>Geothermal</i></b>	<b><i>9,615,145</i></b>
Municipal Solid Waste	129,547
Small Hydro	3,455,059
Solar	739,435
Wind	3,695,732
<b>Total Renewable Procurement</b>	<b>22,516,148</b>

**Table 14: PG&E 2004 RPS Procurement by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
<b><i>Biomass</i></b>	<b><i>2,978,936</i></b>
Biogas	204,351
Geothermal	1,732,857
Municipal Solid Waste	129,547
Small Hydro	2,466,409
Solar	4
Wind	1,078,578
<b>Total Renewable Procurement</b>	<b>8,590,682</b>

**Table 15: SCE 2004 RPS Procurement by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	373,917
Biogas	774,086
<b><i>Geothermal</i></b>	<b><i>7,882,288</i></b>
Municipal Solid Waste	0
Small Hydro	975,516
Solar	739,317
Wind	2,502,376
<b>Total Renewable Procurement</b>	<b>13,247,500</b>

**Table 16: SDG&E 2004 RPS Procurement by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
<b><i>Biomass</i></b>	<b>337,466</b>
Biogas	212,474
Geothermal	0
Municipal Solid Waste	0
Small Hydro	13,134
Solar	114
Wind	114,778
<b>Total Renewable Procurement</b>	<b>677,966</b>

## **Procurement Eligible for Incremental Procurement Target by Fuel Type**

Table 17 shows the fuel mix for procurement that qualifies for meeting the IPT for PG&E, SCE, and SDGE for 2003. Tables 18 through 20 show the fuel mix by individual utility for that year.

**Table 17: 2003 Procurement Eligible for IPT by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	431,313
Biogas	68,503
Geothermal	361,508
Municipal Solid Waste	0
Small Hydro	5,919
Solar	45
Wind	192,019
<b>Total Renewable Procurement</b>	<b>1,059,307</b>

**Table 18: PG&E 2003 Procurement Eligible for IPT by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	72,099
Biogas	5,243
Geothermal	121,733
Municipal Solid Waste	0
Small Hydro	233
Solar	0
Wind	0
<b>Total Renewable Procurement</b>	<b>199,308</b>

**Table 19: SCE 2003 Procurement Eligible for IPT by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	17,496
Biogas	0
Geothermal	239,775 <sup>1</sup>
Municipal Solid Waste	0
Small Hydro	5,686
Solar	45
Wind	191,469
<b>Total Renewable Procurement</b>	<b>454,471</b>

<sup>1</sup>Staff estimated the geothermal procurement that qualifies for IPT. SCE emailed a spreadsheet to Energy Commission staff on November 17, 2005 that itemizes 2004 procurement by facility from the Calpine Geysers facility. According to that spreadsheet, SCE procured generation from Unit 3, Unit 5/6, Unit 7/8, Unit 12, Unit 17, Unit 11, and Unit 18. SCE reported that they procured 1,184,759,406 kWh from the Calpine Geysers in 2003. The 2003 estimate assumes that SCE procured generation from the same facilities that were used in 2004 and in the same proportion.

**Table 20: SDG&E 2003 Procurement Eligible for IPT by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	341,718
Biogas	63,260
Geothermal	0
Municipal Solid Waste	0
Small Hydro	0
Solar	0
Wind	550
<b>Total Renewable Procurement</b>	<b>405,528</b>

Table 21 shows the fuel mix for procurement eligible for the IPT for PG&E, SCE, and SDGE for 2004, and Tables 22 through 24 show the fuel mix by individual utility for that year. Note that Table 21 shows zero geothermal that qualifies for the IPT in 2004. Incremental geothermal procurement from PG&E and SCE was only included in the 2003 total.<sup>21</sup> A detailed discussion of how procurement from geothermal facilities was allocated to baseline and IPT is discussed in Section 3.

<sup>21</sup> The RPS eligibility of geothermal facilities varies depending on the date the facility first commences commercial operations. As defined in the *Renewables Portfolio Standard Eligibility Guidebook*, incremental generation from geothermal facilities is eligible for the RPS but is limited to generation resulting from eligible capital expenditures as described in the *Guidebook*.

**Table 21: 2004 Procurement Eligible for IPT by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	0
Biogas	27,924
Geothermal	0
Municipal Solid Waste	0
Small Hydro	1,509
Solar	0
Wind	174,175
<b>Total Renewable Procurement</b>	<b>203,608</b>

**Table 22: PG&E 2004 Procurement Eligible for IPT by Fuel Type<sup>1</sup>**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	0
Biogas	0
Geothermal	0
Municipal Solid Waste	0
Small Hydro	0
Solar	0
Wind	0
<b>Total Renewable Procurement</b>	<b>0</b>

<sup>1</sup> In reviewing PG&E's RPS-Track submittals to the Energy Commission, did not identify procurement that qualified for the IPT for 2004. PG&E procured from the same facilities in 2004 and 2003.

**Table 23: SCE 2004 Procurement Eligible for IPT by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	0
Biogas	19,189
Geothermal	0
Municipal Solid Waste	0
Small Hydro	0
Solar	0
Wind	59,947
<b>Total Renewable Procurement</b>	<b>79,136</b>



**Table 24: SDG&E 2004 Procurement Eligible for IPT  
by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	0
Biogas	8,735
Geothermal	0
Municipal Solid Waste	0
Small Hydro	1,509
Solar	0
Wind	114,228
<b>Total Renewable Procurement</b>	<b>124,472</b>

### **Procurement from New and Repowered Generation**

Based on the information presented on the CEC-RPS-Track filings, Table 25 shows how much energy IOUs procured from new and repowered RPS-eligible facilities in 2003 and 2004. Tables 26 and 27 show the data disaggregated by fuel type for 2003 and 2004, respectively.

**Table 25: New and Repowered Procurement**

<b>Utility</b>	<b>2003 Procurement (MWh)</b>	<b>2004 Procurement (MWh)</b>
<b>PG&amp;E</b>	0	0
<b>SCE</b>	19,101	47,886
<b>SDG&amp;E</b>	0	84,084
<b>Totals</b>	<b>19,101</b>	<b>131,970</b>

**Table 26: 2003 New and Repowered Procurement by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	0
Biogas	0
Geothermal	19,056
Municipal Solid Waste	0
Small Hydro	0
Solar	45
Wind	0
<b>Total Renewable Procurement</b>	<b>19,101</b>

**Table 27: 2004 New and Repowered Procurement by Fuel Type**

<b>Fuel</b>	<b>Procurement (MWh)</b>
Biomass	0
Biogas	27,924
Geothermal	28,679
Municipal Solid Waste	0
Small Hydro	0
Solar	18
Wind	75,349
<b>Total Renewable Procurement</b>	<b>131,970</b>

## **Verification of Delivery Requirement**

Procurement from an out-of-state RPS-eligible facility must be delivered to an in-state market hub or in-state substation located within the California Independent System Operator (CA ISO) control area. In accordance with the policies of the North American Electricity Reliability Council (NERC), electricity delivered across control areas must be tagged with what is commonly referred to as a “NERC tag.” NERC tags require, among other things, that information be provided identifying the Generation Providing Entity, the “source” or “Point of Injection,” the physical transmission path for delivery, the contract or market path, the location to which the electricity will be delivered to (“sink” or “Point of Withdrawal”), and the Load Serving Entity responsible for the consumption of electricity delivered. Pursuant to the *Renewables Portfolio Standard Eligibility Guidebook*, RPS delivery from out-of-state must be documented with summary reports to the Energy Commission on NERC tag transactions.

In 2004, there were only two specific purchases from two RPS-certified facilities located out-of-state. Staff verified that one facility (and one specific purchase) was located in the CA ISO, and therefore NERC tag data were not available because NERC tags are only created when energy delivery crosses control areas. For the second facility, staff reviewed a report submitted by SCE summarizing NERC tag data that identified the RPS-eligible generator and SCE as the procuring IOU. This documentation confirmed that the RPS delivery requirements were satisfied.

## SECTION 5: LIMITATIONS OF THE INTERIM TRACKING SYSTEM

Under the Interim Tracking System, the Energy Commission is limited by the extent that it can cross-reference California RPS-procurement with other specific purchases. For example, although staff makes an effort to cross reference California RPS-procurement with retail claims made in Oregon and Washington, staff does not check against retail claims made in other states.

Further, staff has only anecdotal information about specific purchases made in which Renewable Energy Certificates (RECs), also called “green tags” or “environmental attributes,” are sold separately from the associated electricity.<sup>22</sup> For California’s RPS, RECs must remain “bundled” with the electricity.<sup>23</sup> In some cases generators, marketers, or brokers sell “unbundled” RECs as a separate commodity to individuals, companies, utilities, or other organizations. The Energy Commission does not track these transactions, and there is no mechanism for entities to report their unbundled REC procurement to the Energy Commission. Consequently, the Energy Commission does not have a means to cross-check RPS procurement claims with unbundled RECs that are sold in the voluntary market or used for compliance with the regulatory requirements of other states.

The robustness of the interim tracking system is limited by the quality of the generation data. In most cases, the generation data used for this report is self-reported and is not independently verified with third-party meter reads. WREGIS will help address many of these data limitations because it will track renewable energy transactions throughout the WECC, not just California, Oregon and Washington; it will account for unbundled REC transactions; and it will be supported by generation data from meter reads rather than self-reported generation data.

In this analysis, the Energy Commission staff identified the amount of procurement that qualified as IPT and baseline based on statutory requirements and the application of CPUC’s rules. In some cases, the staff made assumptions about how to allocate procurement as satisfying either the IPT or baseline. Those assumptions are documented here for purposes of completeness and to help identify outstanding accounting issues that need resolution. If the assumptions change, the results may also change; thus, they should be carefully considered in determining compliance with RPS targets.

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<sup>22</sup> RECs represent the “renewable” quality of electricity generated from a renewable facility. A REC is created when renewable energy is generated. Although the market is not regulated in California, one MWh of renewable energy is typically represented with one REC. Once WREGIS is operational, it will track WREGIS Certificates in which one WREGIS Certificate is created when 1 MWh of renewable energy is generated.

<sup>23</sup> CPUC, Decision 03-06-071, Rulemaking 04-04-026, *Order Initiating Implementation of the Senate Bill 1078 Renewables Portfolio Standard Program*, June 19, 2003.

The Energy Commission anticipates revising the CEC-RPS-track forms and clarifying accounting rules in future years. For example, the Energy Commission anticipates applying the rules to verify IOU filings rather than applying assumptions for how to differentiate procurement as IPT or baseline.

Given these caveats, this report verifies the 2004 RPS procurement in comparison with CPUC procurement targets.

## Availability of Generation Data

The results provided here describe the availability of data to verify that an RPS-eligible facility generated at least as much energy as was procured by the IOUs. The IOUs made 435 specific purchases in 2004 for the RPS. The Energy Commission located independent sources of generation data for 285 of those purchases, representing 66 percent of the RPS-specific purchases.

Since the specific purchases vary in quantity procured, the Energy Commission also calculated the total procurement in MWh with available generation data. Of 22,516,148 MWh claimed on the 2004 CEC-RPS-Track forms, the Energy Commission located and analyzed generation data for 21,676,651 MWh, representing 96 percent of the claims in MWh. Table 28 identifies the total number of specific purchases per IOU and the quantity of electricity procured. Table 29 shows how many specific purchases were validated with independent sources of generation data and the corresponding quantity of electricity procured. Table 29 also shows the quantity of specific purchases for which data were not available to verify there was at least as much energy generated by the RPS-eligible facility as was procured from the facility.

**Table 28: Total RPS Specific Purchases**

Utility	Number of Purchases	RPS Procurement (MWh)
PG&E	230	8,590,682
SCE	185	13,247,500
SDG&E	20	677,966
<b>Totals</b>	<b>435</b>	<b>22,516,148</b>

**Table 29: Availability of Generation Data**

Utility	Procurement Verified with Generation Data		Procurement for which Generation Data was not Available	
	Number of Specific Purchases	Energy Procured (MWh)	Number of Specific Purchases	Energy Procured (MWh)
PG&E	144	8,186,779	86	403,903
SCE	128	12,827,741	57	419,759
SDG&E	13	662,131	7	15,835
<b>Totals</b>	<b>285</b>	<b>21,676,651</b>	<b>150</b>	<b>839,497</b>

Tables 30 through 35 disaggregate the data shown in Table 29 by fuel type for each IOU. As mentioned above, although staff could verify only two-thirds of the RPS specific purchases, the verified procurement represents 96 percent of the 2004 RPS procurement in terms of MWh.

### ***Pacific Gas and Electric***

Table 30 compares PG&E's total procurement with the quantity that the Energy Commission verified with an independent source of generation data. Conversely, Table 31 identifies PG&E's RPS purchases that could not be verified with its total RPS purchases. Staff identified generation data for 144 of the 230 RPS-specific purchases made by PG&E for 2004. These 144 purchases total 8,186,779 MWh out of the 8,590,682 MWh reported by PG&E. This indicates that 95 percent of the total eligible RPS generation in MWh reported by PG&E could be verified with an independent source of generation data. The high percentage of verified generation occurred across technologies, with the exception of one solar purchase made by PG&E that could not be verified.

For PG&E, generation data was available for 85 percent of the biogas generation and 99 percent of the biomass generation. Of the 86 purchases that could not be verified with generation data, 70 were from small hydroelectric facilities representing 157,274 MWh. Although a large number purchases could not be verified, generation data was available for 94 percent of the small hydro claims.

**Table 30: Data Available for PG&E**

	PG&E's Procurement Verified with Generation Data		PG&E's Total Procurement	
Fuel Type	Number of Purchases	Energy Procured (MWh)	Number of Purchases	Energy Procured (MWh)
Biomass	25	2,952,753	26	2,978,936
Biogas	9	172,700	16	204,351
Geothermal	6	1,600,642	10	1,732,857
Municipal Solid Waste	1	129,547	1	129,547
Small Hydro	74	2,309,135	144	2,466,409
Solar	0	0	1	4
Wind	29	1,022,002	32	1,078,578
<b>Totals</b>	<b>144</b>	<b>8,186,779</b>	<b>230</b>	<b>8,590,682</b>

**Table 31: Data Not Available for PG&E**

	PG&E's Procurement Not Verified with Generation Data		PG&E's Total Procurement	
Fuel Type	Number of Purchases	Energy Procured (MWh)	Number of Purchases	Energy Procured (MWh)
Biomass	1	26,183	27	3,108,483
Biogas	7	31,651	16	204,351
Geothermal	4	132,215	10	1,732,857
Municipal Solid Waste	0	0	0	0
Small Hydro	70	157,274	144	2,466,409
Solar	1	4	1	4
Wind	3	56,576	32	1,078,578
<b>Totals</b>	<b>86</b>	<b>403,903</b>	<b>230</b>	<b>8,590,682</b>

### ***Southern California Edison***

Table 32 compares SCE's total RPS purchases that could be verified with its total RPS purchases. Table 33 compares SCE's RPS purchases that could not be verified with SCE's total RPS purchases. Generation data was available for 128 of 185 RPS purchases made by SCE for 2004. Of the 13,247,500 MWh procured by SCE, these 128 specific purchases total 12,827,741 MWh, indicating that 97 percent of the total eligible RPS generation in kWh claimed by SCE could be verified with independent sources of generation data.

The high percentage of verified generation occurred across technologies, with generation data available for 89 percent of the specific purchases from wind and 100 percent of the purchases from biomass. Of the 57 specific purchases that could not be verified with generation data, 25 were from small hydro facilities. Although a low number of overall small hydro purchases were verified, generation data was available for 98 percent of all of the small hydro purchases in MWh.

**Table 32: Data Available for SCE**

	<b>SCE's Procurement Verified with Generation Data</b>		<b>SCE's Total Procurement</b>	
<b>Fuel Type</b>	<b>Number of Purchases</b>	<b>Energy Procured (MWh)</b>	<b>Number of Purchases</b>	<b>Energy Procured (MWh)</b>
Biomass	1	373,917	1	373,917
Biogas	15	751,862	23	774,086
Geothermal	26	7,782,534	27	7,882,288
Municipal Solid Waste	0	0	0	0
Small Hydro	33	956,788	58	975,516
Solar	8	739,292	10	739,317
Wind	45	2,223,348	66	2,502,376
<b>Totals</b>	<b>128</b>	<b>12,827,741</b>	<b>185</b>	<b>13,247,500</b>

**Table 33: Data Not Available for SCE**

	<b>SCE's Procurement Not Verified Generation Data</b>		<b>SCE's Total Procurement</b>	
<b>Fuel Type</b>	<b>Number of Purchases</b>	<b>Energy Procured (MWh)</b>	<b>Number of Purchases</b>	<b>Energy Procured (MWh)</b>
Biomass	0	0	1	373,917
Biogas	8	22,224	23	774,086
Geothermal	1	99,754	27	7,882,288
Municipal Solid Waste	0	0	0	0
Small Hydro	25	18,728	58	975,516
Solar	2	25	10	739,317
Wind	21	279,028	66	2,502,376
<b>Totals</b>	<b>57</b>	<b>419,759</b>	<b>185</b>	<b>13,247,500</b>

***San Diego Gas and Electric***

Table 34 compares SDG&E's RPS specific purchases that could be verified with its total RPS procurement. Table 35 compares the RPS specific purchases for which independent sources of generation data were not available for comparison with the amount SDG&E procured. Generation data was available for 13 of 20 RPS-specific purchases made by SDG&E for 2004. The 13 specific purchases were verified with eligible generation data and total 662,130 MWh out of the 677,966 MWh procured by SDG&E, representing 98 percent of SDG&E's procurement in MWh.

Only 57 percent of SDG&E's small hydro specific purchases in MWh could be verified. SDG&E procured a total of 13,134 MWh from five small hydro facilities, yet only 7,454 MWh from one facility could be verified. Additionally, one solar claim totaling 114 MWh did not have available generation data. However, for the

remaining technologies, verification data was available for 95 percent of the biogas generation and 100 percent of the biomass generation.



**Table 34: Data Available for SDG&E**

	SDG&E's Procurement Verified with Generation Data		SDG&E's Total Procurement	
Fuel Type	Number of Purchases	Energy Procured (MWh)	Number of Purchases	Energy Procured (MWh)
Biomass	1	337,466	1	337,466
Biogas	9	202,456	10	212,474
Geothermal	0	0	0	0
Municipal Solid Waste	0	0	0	0
Small Hydro	1	7,454	5	13,134
Solar	0	NA	1	114
Wind	2	114,754	3	114,778
<b>Totals</b>	<b>13</b>	<b>662,130</b>	<b>20</b>	<b>677,966</b>

**Table 35: Data Not Available for SDG&E**

	SDG&E's Procurement Not Verified with Generation Data		SDG&E's Total Procurement	
Fuel Type	Number of Purchases	Energy Procured (MWh)	Number of Purchases	Energy Procured (MWh)
Biomass	0	0	1	337,466
Biogas	1	10,018	10	212,474
Geothermal	0	0	0	0
Municipal Solid Waste	0	0	0	0
Small Hydro	4	5,680	5	13,134
Solar	1	114	1	114
Wind	1	24	3	114,778
<b>Totals</b>	<b>7</b>	<b>15,836</b>	<b>20</b>	<b>677,966</b>

## Investor-Owned Utility Procurement Verification

The Energy Commission staff verified that the IOUs' procurement from a facility did not exceed the amount of energy produced from the facility.

### *Pacific Gas and Electric*

Of PG&E's 230 specific purchases, generation data were identified for 144 specific purchases totaling 8,186,779 MWh. In 135 of those specific purchases, there was less than a 5 percent difference between the procurement from that plant and the amount generated, as shown in Table 36. However, there are nine specific purchases in which the procurement exceeds the amount generated by that power plant by 5 percent or greater when the procurement is compared with available generation data. This includes five specific wind purchases totaling 115,684 MWh and two biomass specific purchases totaling 131,159 MWh (Table 37).

**Table 36: PG&E's Procurement versus Generation**

Percent Difference between Procurement and Generation Data	Number of Specific Purchases
5 percent or Higher	9
Less than 5 percent	135

Table 37 shows the nine PG&E specific purchases for which the amount procured exceeds the amount generated, according to data available. This table shows the number of occurrences in which the procurement exceeded generation by at least 5 percent (in cases where multiple sources of generation data were available, staff selected the greatest quantity generated for comparison). The table also shows the quantity of energy procured, by fuel type, through these purchases.

**Table 37: PG&E's Procurement that Exceeds Generation in 2004**

Fuel Type	Number of Specific Purchases	Quantity Procured (MWh)
Biomass	2	131,159
Biogas	1	32,646
Geothermal	0	NA
Municipal Solid Waste	0	NA
Small Hydro	1	5,416
Solar	0	NA
Wind	5	115,684
<b>Total</b>	<b>9</b>	<b>284,905</b>

### ***Southern California Edison***

Of SCE's 185 RPS specific purchases, generation data was available for 128 specific purchases totaling 12,827,741 MWh. In 116 of those specific purchases, there was less than a 5-percent difference between the procurement from that plant than the amount generated (Table 38). However, there are 12 specific purchases in which the amount purchased exceeds generated by that power plant as indicated in the available data for the RPS-eligible facility (Table 38). This includes four geothermal specific purchases totaling 564,957 MWh and six wind claims totaling 287,495 MWh (Table 39).

**Table 38: SCE's Procurement versus Generation**

Percent Difference	Number of Specific Purchases
5 percent or Higher	12
Less than 5 percent	116

Table 39 shows the 12 SCE specific purchases for which the amount procured exceeds the amount generated, according to data available. This table shows the

number of occurrences in which the procurement exceeded generation by at least 5 percent. In cases where multiple sources of generation data were available, staff selected the greatest quantity generated for comparison. The table also shows the quantity of energy procured, by fuel type, through these purchases.

**Table 39: SCE's Procurement that Exceeds Generation in 2004**

<b>Fuel Type</b>	<b>Number of Specific Purchases</b>	<b>Quantity Procured (MWh)</b>
Biomass	0	NA
Biogas	0	NA
Geothermal	4	564,957
Municipal Solid Waste	0	NA
Small Hydro	2	15,348
Solar	0	NA
Wind	6	287,495
<b>Total</b>	<b>12</b>	<b>867,800</b>

### ***San Diego Gas and Electric***

Of SDG&E's 20 RPS specific purchases, generation data was available for 13 totaling 662,131 MWh. For 12 purchases, there was less than a 5-percent difference between the quantities procured and the amount generated (Table 40). There was one specific biomass purchase for 23,451 MWh in which the procurement exceeded the data on the amount generated by that power plant by 5 percent or higher (Table 41).

**Table 40: SDG&E's Procurement versus Generation**

<b>Percent Difference</b>	<b>Number of Specific Purchases</b>
5 percent or Higher	1
Less than 5 percent	12

Table 41 shows the single SDG&E specific purchase for which the amount procured exceeds the amount generated, according to data available. This table shows the number of occurrences in which the procurement exceeded generation by at least 5 percent. In cases where multiple sources of generation data were available, staff selected the greatest quantity generated for comparison. The table also shows the quantity of energy procured, by fuel type, through these purchases.

**Table 41: SDG&E's Procurement that Exceeds Generation, 2004**

<b>Fuel Type</b>	<b>Number of Specific Purchases</b>	<b>Quantity Procured (MWh)</b>
Biomass	0	NA
Biogas	1	23,451
Geothermal	0	NA
Municipal Solid Waste	0	NA
Small Hydro	0	NA
Solar	0	NA
Wind	0	NA
<b>Total</b>	<b>1</b>	<b>23,451</b>

## **APPENDIX**

- IOU's CEC-RPS-Track forms submitted by the IOUs
- Available generation totals for each facility by data source