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BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop
Additional Methods to Implement the California
Renewables Portfolio Standard Program.

Rulemaking 06-02-012
(Filed February 16, 2006)

**DECISION ON DEFINITION AND ATTRIBUTES OF RENEWABLE ENERGY
CREDITS FOR COMPLIANCE WITH THE CALIFORNIA RENEWABLES
PORTFOLIO STANDARD**

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DECISION ON DEFINITION AND ATTRIBUTES OF RENEWABLE ENERGY CREDITS FOR COMPLIANCE WITH THE CALIFORNIA RENEWABLES PORTFOLIO STANDARD

1. Summary

In this decision, we define and specify the attributes of a renewable energy credit (REC) for compliance with the California renewables portfolio standard (RPS) program.¹ RECs are playing an increasing part in several important aspects of energy policy, including participation in net-metering, the California Solar Initiative, the Self-Generation Incentive Program, tariffs or standard contracts for utilities' purchase of RPS-eligible generation from certain facilities sized at or below 1.5 megawatts (MW), and voluntary programs reducing emissions of greenhouse gases (GHG). Clarifying the definition and attributes of the REC is thus increasingly important. It is appropriate to make that clarification even in advance of, and independent of, any decision on the use of unbundled or tradable RECs for RPS compliance. Both the current RPS regime using the "bundled" transfer of energy and RECs together and any prospective regime in which use of unbundled RECs is allowed necessarily involve the sale of RECs. We believe that in order for a market to function correctly, participating entities must have a clear and consistent understanding of what, exactly, they are buying and selling.

We will turn in a later decision to whether to authorize the use of unbundled and/or tradable RECs (TRECs) for RPS compliance. If we authorize the use of TRECs, we will also set out the structure and rules for the TREC market and for the integration of TRECs into the RPS compliance regime.

¹ The complete definition and attributes of a REC are set out in Ordering Paragraph 1.

2. Introduction

As can be seen from the background and history set forth below, the definition of a REC has had a relatively long but not fully resolved history in the RPS program. We have taken a number of steps, including a workshop held by Energy Division on TRECs for RPS compliance, and associated comments submitted by many parties, to reach closure on the definition and use of RECs.

Through legislative action and on our own initiative, the Commission has also been moving forward in several areas that implicate RECs. In Decision (D.) 07-01-018, we determined (without deciding on the content of the REC) that participation in net-metering, the California Solar Initiative, and the Self-Generation Incentive Program is not conditioned on transfer of the RECs associated with customer side renewable distributed generation to the interconnected utility. In D.07-07-027, we implemented Pub. Util. Code § 399.20,² providing for tariffs or standard contracts for utilities' purchase of RPS-eligible generation from certain water and wastewater facilities, with the generation counting toward the utilities' RPS targets. We discussed the value of these arrangements for RPS compliance in terms of RECs, again without deciding on the content of the REC.

Issues related to RECs have also appeared in our consideration of reducing emissions of GHG. In D.06-12-032, we approved a new Pacific Gas and Electric Company (PG&E) program called ClimateSmart, which provides PG&E customers with an opportunity to offset the GHG emissions occurring from their

² Unless otherwise indicated, all subsequent citations to sections refer to the Public Utilities Code, and all citations to rules refer to the Commission's Rules of Practice and Procedure, which are codified at Chapter 1, Division 1 of Title 20 of the California Code of Regulations.

use of electricity and natural gas. In Resolution (Res.) G-3410 (June 12, 2008), we approved an expansion of the allowable offsets in the ClimateSmart program to include manure management programs. In doing so, we clarified that an RPS-eligible REC does not include the GHG emission reductions attributable to methane capture and destruction, because these emission reductions constitute “treatment benefits” that, as set out in § 399.12(h)(2), are expressly excluded from the attributes that must be conveyed with a REC for RPS compliance purposes. We further noted that comprehensive treatment of RECs would occur in this proceeding, but that the change sought by PG&E would not interfere with our consideration of the larger issues here. In our proceeding on GHG policy, Rulemaking (R.) 04-06-009, we affirmed in D.08-03-018 that the relationship of RECs and GHG emissions attributes would be addressed in this proceeding.

Finally, the development of the Western Renewable Energy Generation Information System (WREGIS)³ has been completed and WREGIS is in its implementation phase. WREGIS is a REC-based accounting system that will track renewable energy throughout the Western Electricity Coordinating Council (WECC). The California Energy Commission (CEC) will use WREGIS to verify eligible RPS procurement.

3. Procedural Background

The role of RECs in the RPS program has been a topic of consideration since the inception of the program. In this section, we summarize the procedural history of this consideration, focusing on the steps taken in this proceeding. In

³ Information and forms related to WREGIS may be found at the WREGIS web site, <http://www.wregis.org/>.

the section on History of the REC, below, we review the substantive issues and their current status.

The RPS program was initiated by Senate Bill (SB) 1078 (Sher), Stats. 2002, ch. 516.⁴ In D.02-10-062, a comprehensive decision about utility procurement issued in R.01-10-024, we also addressed the preparations for RPS implementation. We asked for comments on how to implement the RPS program, including whether the Commission should consider inter-utility trading of RECs.

These comments were addressed in D.03-06-071, the order beginning implementation of the RPS program. The Commission concluded that, in view of the imminent statutory deadline for commencing the RPS program, consideration of REC trading should be deferred. The decision left open the possibility that a REC trading system might be implemented in the future, but noted that the creation of such a system would raise a number of significant issues.

The issue of tradable RECs has been revisited, but not resolved, on several occasions. In R.04-04-026, the predecessor to this proceeding, the Assigned Commissioner's Ruling and Scoping Memo sought comments on allowing the use of tradable RECs for RPS compliance. In D.05-11-025, the Commission indicated its interest in further exploring of the use of tradable RECs.

In R.06-02-012, the Order Instituting Rulemaking for this proceeding, the Commission identified issues related to tradable RECs as an important component of this proceeding. The Scoping Memo and Ruling of Assigned

⁴ RPS legislation is codified at Pub. Util. Code §§ 399.11-399.20.

Commissioner (April 28, 2006) set out a number of issues related to tradable RECs, and assigned them to the second portion of this proceeding.

A staff white paper, “Renewable Energy Certificates and the California Renewables Portfolio Standard Program” (REC white paper), was published April 20, 2006.⁵ Comments on the REC white paper were filed in late May 2006; reply comments were filed on June 14, 2006.⁶

Among other things, the REC white paper set out definitions of terms that have been used throughout the subsequent consideration of the use of RECs for RPS compliance. We adopted the definitions of “unbundled” RECs and “tradable” RECs in D.06-10-019. We repeat them here for clarity:

Under an unbundled REC regime, claim over the renewable attributes of energy produced by eligible renewable technologies can be transferred from the renewable generator to one [load-serving entity] LSE while the energy is delivered to another. However, once this transfer occurs, claim over the attributes cannot

⁵ The REC white paper may be found at http://www.cpuc.ca.gov/word_pdf/REPORT/55606.doc.

⁶ Comments were filed by Central California Power; Sustainable Conservation; Powerex Corp.; California Solar Energy Industries Association (CalSEIA), Clean Power Markets, Inc., PV NOW, Vote Solar Initiative (jointly); PG&E; Mountain Utilities; Division of Ratepayer Advocates (DRA); Southern California Edison Company (SCE); San Diego Gas & Electric Company (SDG&E), Pilot Power Group, Inc.; Alliance for Retail Energy Markets (AReM) and Western Power Trading Forum (WPTF) (jointly, collectively, AReM); Aglet Consumer Alliance (Aglet); Green Power Institute (GPI); Center for Energy Efficiency and Renewable Technologies (CEERT); Independent Energy Producers Association (IEP); Union of Concerned Scientists (UCS); The Utility Reform Network (TURN); and California Large Energy Consumers Association and California Manufacturers and Technology Association (jointly).

Reply comments were filed by Central California Power, CEERT, GPI, Aglet, Pilot Power, AReM, SDG&E, SCE, Mountain Utilities, UCS, TURN, PG&E, Powerex, and IEP.

be resold. In contrast, under a tradable REC regime, although the concept of selling the energy and claim over the attributes to different parties remains intact, RECs may be transferred from the renewable generator to any third party, not just obligated LSEs. In addition, these attributes can be resold subsequent to the initial sale.⁷

In D.06-10-019, the Commission decided not to authorize the use of unbundled RECs for RPS compliance at that time. We stated that we would consider the use of unbundled and/or tradable RECs later in this proceeding.⁸

The Amended Scoping Memo and Ruling of Assigned Commissioner (December 29, 2006) (Amended Scoping Memo) revised the tasks for this proceeding, in light of prior work and the enactment of SB 107 (Simitian), Stats. 2006, ch. 464. The Amended Scoping Memo identified three areas related to tradable RECs:

- Exploring the use of tradable RECs for RPS compliance by all RPS-obligated load-serving entities (LSEs), including determining what attributes should be included in a REC;
- Determining the appropriate treatment of RECs associated with energy generated by renewable customer-side distributed generation, after examination of two important issues – measurement of renewable output from customer-side distributed generation, and analysis of the impact of ratepayer subsidies of renewable distributed generation – in R.06-03-004; and

⁷ REC white paper, p. 1, n. 1.

⁸ Unless clarity requires a different usage, we will refer to unbundled and tradable RECs together as “tradable RECs.” Following the usage of Energy Division and the parties, tradable RECs may also be called TRECs. We will refer to transactions using unbundled and/or tradable RECs as “TREC transactions” or “REC-only transactions.”

- Determining the status of RECs associated with renewable energy generated by qualifying facilities (QFs) under contract with California utilities.

The Second Amended Scoping Memo and Ruling of Assigned Commissioner (February 25, 2008) (Second Amended Memo) noted several developments related to the use of TRECs for RPS compliance since the issuance of the Amended Memo. These changes resolved some of the previously identified issues, added new tasks, and moved other issues forward.

In D.07-01-018, issued in R.06-03-004, we determined that RECs associated with customer-side renewable distributed generation belong to the system owner, irrespective of participation in net-energy metering, the California Solar Initiative, or the Self Generation Incentive Program.

SB 107 resolved the status of RECs for renewable energy generated by QFs by prohibiting the creation of RECs associated with energy from QFs under contracts executed after January 1, 2005; it also allowed the creation of RECs from energy under any contract prior to January 1, 2005 only if the contract explicitly addressed the ownership of RECs.⁹ SB 107 also added the requirement that, in order for us to authorize the use of TRECs for RPS compliance, this Commission and the CEC must each make a determination that the CEC's RPS tracking system (including WREGIS) is ready to support the use of unbundled and/or tradable RECs for RPS compliance.¹⁰ A draft joint agency staff report on

⁹ Sections 399.16(a)(6), (5).

¹⁰ Section 399.16(a)(1).

the tracking system was issued March 7, 2008.¹¹ The CEC held a workshop on the draft report on March 17, 2008.

Energy Division staff held a comprehensive workshop on TREC's and RPS compliance on September 5-7, 2007.¹² Parties filed and served pre-workshop comments on August 17, 2007.¹³ Post-workshop comments were filed on November 13, 2007.¹⁴ Post-workshop reply comments were filed on December 5, 2007.¹⁵

At the prehearing conference held December 10, 2007, some parties suggested that parties interested in the subject might try to develop a consensus

¹¹ The draft report may be found at <http://www.energy.ca.gov/2008publications/CEC-300-2008-001/CEC-300-2008-001-SD.PDF>.

¹² The workshop notice and the assigned Administrative Law judge's (ALJ) rulings seeking comments were circulated to the service lists in this proceeding, R.06-05-027 (RPS administration), R.06-03-004 (distributed generation and California Solar Initiative), and R.06-04-009 (GHG policy).

¹³ Pre-workshop comments were filed by Central California Power; Powerex, Solar Alliance; PacifiCorp; CEERT; Sustainable Conservation; AReM and WPTF (jointly); CalpinePowerAmerica-CA, LLC; Coral Power, LLC; SDG&E; Aglet; IEP; PG&E; UCS; SCE; GPI; PPM Energy, Inc.; CPV Renewable Energy Company, LLC; and Sempra Energy Solutions.

¹⁴ Post-workshop comments were filed by PG&E; GPI; Powerex; SDG&E; Golden State Water Company; IEP; Pilot Power; Central California Power; EcoSecurities; DRA; CEERT; Calpine Corporation and CalpinePowerAmerica-CA, LLC (jointly, collectively, Calpine); and AReM and WPTF (jointly); Mountain Utilities; SCE; TURN; PacifiCorp; California Farm Bureau Federation and Sustainable Conservation (jointly); Solar Alliance and CalSEIA (jointly).

¹⁵ Post-workshop reply comments were filed by Central California Power; PacifiCorp; Aglet; UCS; California Farm Bureau Federation, Inland Empire Utilities Agency, Sustainable Conservation (jointly); Recurrent Energy, Inc., Solar Alliance, CalSEIA (jointly); Calpine; TURN; IEP; AReM; SCE; Mountain Utilities; CEERT; SDG&E; DRA; GPI; and PG&E.

recommendation on the definition and attributes of a TREC. Information about informal discussions among the parties was circulated to the service list in this proceeding, R.06-05-027, R.06-03-004, and R.06-04-009. The discussions did not result in the filing of any recommendations on this topic.

On May 9, 2008, the Center for Resource Solutions (CRS) filed a Motion for Leave to File Additional Comments related to REC definition and attributes.¹⁶ This motion was granted by an ALJ's ruling on June 6, 2008.¹⁷ The ruling allowed reply comments to be filed not later than June 11, 2008.¹⁸

4. Discussion

4.1. History of the REC in the RPS Program

4.1.1. Initial Steps

In SB 1078, the Legislature did not use the term “renewable energy credit.” At our request, the parties discussed the use of RECs in comments and testimony filed near the end of R.01-10-024, which informed the decision in D.03-06-071. We concluded that consideration of the use of tradable RECs was premature, but did consider the value of a REC-based accounting system for RPS compliance, in contrast to an accounting system based on tracking contracts. We found that a

¹⁶ The CRS comments were joined by the Sacramento Municipal Utility District (SMUD). SMUD's Motion for Party Status, dated August 4, 2008, was granted by the ALJ's Ruling Granting Motion of Sacramento Municipal Utility District for Party Status (August 12, 2008).

¹⁷ Parties were notified informally by e-mail on May 28, 2008.

¹⁸ Reply comments were filed on June 11, 2008 by AReM and WPTF (jointly); DRA; GPI; IEP; SCE, PG&E, PacifiCorp, Sierra Pacific, and SDG&E (jointly; collectively, IOUs); Solar Alliance and CalSEIA (jointly; collectively, Solar Alliance); TURN; and UCS.

REC-based accounting system would be relatively simple, efficient, and best able to prevent double counting. It also would reduce administrative problems if and when REC trading became part of RPS compliance. Accordingly, we recommended to the CEC that it adopt a REC-based accounting system for RPS compliance.¹⁹

In D.03-06-071, we also considered the definition of a REC, *i.e.*, what attributes in addition to energy are being acquired by an RPS-obligated LSE in a transaction for RPS-eligible energy. We concluded that we would adopt an interim, "default," REC definition and come back to it in more detail later. We decided that "[t]he default definition of a REC should include all renewable and environmental attributes associated with production of electricity from a renewable resource." (Conclusion of Law 7.) We also decided, again on a provisional basis, that power purchase agreements (PPAs) with new biomass or landfill gas facilities must ensure that the net carbon emissions from the facility are zero. We emphasized that the REC definition we adopted was not final, and stated in the Order that "[p]arties will have further opportunities to address the definition of a renewable energy credit." (Ordering Paragraph 5.)

These initial determinations were reflected in D.04-06-014, which adopted standard terms and conditions (STCs) for utilities' "year one" contracts with RPS-eligible generators, to enable the first RPS solicitation to move forward. The

¹⁹ The Legislature assigned to the CEC the responsibility to: [d]esign and implement an accounting system to verify compliance with the renewables 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. (§ 399.13(b), as provided in SB 1078.)

adopted STCs were essentially those proposed by a group of parties to R.04-04-026, though we made a number of modifications to the proposal, based both on our own analysis and on further party comments.²⁰ We also noted that we expected to make further refinements to the STCs as the RPS program developed.

The STC numbered 2 in Appendix A to D.04-06-014 is headed “Definition and Ownership of RECs.” It does not define a REC. It creates a definition of “Environmental Attributes” that would be transferred from the generator to the purchasing utility in a PPA for RPS-eligible energy.²¹ This definition is expansive, including “any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Unit(s), and its displacement of conventional energy generation.” Included in the attributes are avoided emissions of conventional pollutants; avoided emissions of GHGs; and “the reporting rights to these emissions.” There are also four excluded categories of attributes: power attributes; production tax credits or other financial incentives; fuel-related subsidies; and emission reduction credits used to comply with local, state, or federal permit requirements. The section further required that biomass or landfill gas generators, if they receive any tradable attributes based on GHG reduction benefits or other emission offsets attributed to the generators’ fuel use, provide sufficient environmental attributes to the buyer ensure that “there are zero net emissions associated with the production of electricity from such facility.” Finally, the STC provides that it

²⁰ The proposal on which we based the STCs was made by CEERT, IEP, PG&E, SDG&E, and TURN.

²¹ This STC is set out in Appendix A-1 to this decision.

may not be modified by the parties to the PPA. This STC was and is (in slightly revised form) a feature of RPS PPAs; thus, it governs bundled RPS-eligible energy transactions. D.04-06-014 did not address what role this set of conditions might play in REC-only transactions.

The CEC recognized the preliminary nature of our work on RECs and treated the development of substantive issues related to RECs definitions and trading as “outstanding issues” to be resolved by this Commission. See, *e.g.*, *Renewables Portfolio Standard Eligibility Guidebook*, pp. 2-3 (August 2004).²² The CEC did not need to address immediately our recommendation that RECs be used as an accounting mechanism for the RPS program, because it was using an interim tracking system to verify RPS procurement while WREGIS was being developed. The interim system relies on procurement reports by the RPS-obligated LSE and matches those reports to reports of meter readings at generation facilities.²³

We picked up the discussion of RECs again in D.05-11-025, where we briefly indicated our intention to proceed with an examination of the use of tradable RECs for RPS compliance. This examination began in earnest in March 2006 with the issuance of the REC white paper and subsequent party comments. In D.06-10-019, we decided not to allow unbundled REC transactions at that time, but to consider unbundled and tradable RECs together in the

²² Available at http://www.energy.ca.gov/portfolio/documents/2004-05-10_RPS_ELIG_GUIDEBK.PDF.

²³ A full explanation of the interim tracking system is presented in the *Renewables Portfolio Standard 2005 Procurement Verification Report* (August 2007), found at

Footnote continued on next page

context of newly-enacted SB 107. The Amended Scoping Memo and Ruling of Assigned Commissioner (December 29, 2006) recognized the importance of tradable RECs and the significant impact of SB 107 on this issue.

4.1.2. SB 107

SB 107, effective on January 1, 2007, made a number of changes to the RPS program, including but not limited to providing direction on the use of RECs for RPS compliance. Comments from parties were solicited in both this proceeding and R.06-05-027 to address the integration of the new requirements of SB 107 into the RPS program. Most of these are not relevant to this decision, but two are: changes to STCs, and provisions related to RECs themselves.

4.1.2.1. STCS

In R.06-05-027, parties proposed alterations to various STCs to make them consistent with SB 107. In D.07-02-011, we addressed those proposals. With respect to STC 2, “Environmental Attributes,” we adopted a party proposal to change that term to “Green Attributes.” We also made several other changes, while declining to add new items to the list of Green Attributes.²⁴

Subsequently, four parties sought a change to the version of STC 2 adopted in D.07-02-011, on the grounds that D.07-02-011 had unintentionally and inaccurately limited the scope of the attributes of a REC.²⁵ The parties'

<http://www.energy.ca.gov/2007publications/CEC-300-2007-001/CEC-300-2007-001-CMF.PDF>.

²⁴ This version of STC 2 is set out at pp. 42-43 of D.07-02-011.

²⁵ GPI, PG&E, SDG&E, and TURN jointly sent a letter dated April 17, 2007 pointing out what they stated was an inadvertent error in D.07-02-011 with respect to STC 2. We concluded that the issue pointed out in the letter was not an inadvertent error, and treated the letter as a petition for modification.

unopposed request was granted in D.07-05-057.²⁶ The section of this revision most relevant for our present purposes is the second sentence:

Green Attributes include but are not limited to: Renewable Energy Credits, as well as: (1) any avoided emissions of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth's climate by trapping heat in the atmosphere; (3) the reporting rights to these avoided emissions such as Green Tag Reporting Rights.

4.1.2.2. RECS

SB 107 provided at least four new elements in the consideration of RECs for RPS compliance. Some of these provide the background for the changes to STC 2, but some have other impacts. The new elements include:

- definition and attributes of a REC (§ 399.12(h));
- direction to the CEC to "certify renewable energy credits produced by eligible renewable energy resources" (§ 399.13(b));
- express authorization for this Commission to allow the use of RECs for RPS compliance (§ 399.16(a)); and
- specific direction on the treatment of several aspects of the use of RECs for RPS compliance (§ 399.16).

²⁶ This version of STC 2 is reproduced in Appendix A-2. For clarity, the changes made in both D.07-02-011 and D.07-05-057 are shown. We have compiled all current STCs in D.08-04-009.

These statutory provisions both build on earlier work we have done on RECs and give us some new starting points. We turn to them now.

4.1.2.3. Definition

SB 107 provides the first statutory definition of a REC for California RPS compliance in § 399.12(h). This provision has three parts: subsection (1) gives the meaning of the term; subsection (2) provides the content of the term; and subsection (3) restricts the use of nonrenewable fuels in generating the electricity that underlies a REC.²⁷

4.1.2.3.1. Certificate of Proof

In the first instance, a REC is an accounting device for RPS compliance. It is issued through WREGIS, which is “the accounting system established by the Energy Commission pursuant to Section 399.13.” It shows that “one unit of

²⁷ Section 399.12(h) provides:

(1) ‘Renewable energy credit’ means a certificate of proof, issued through the accounting system established by the Energy Commission pursuant to Section 399.13, that one unit of electricity was generated and delivered by an eligible renewable energy resource.

(2) ‘Renewable energy credit’ includes all renewable and environmental attributes associated with the production of electricity from the eligible renewable energy resource, except for an emissions reduction credit issued pursuant to Section 40709 of the Health and Safety Code and any credits or payments associated with the reduction of solid waste and treatment benefits created by the utilization of biomass or biogas fuels.

(3) No electricity generated by an eligible renewable energy resource attributable to the use of nonrenewable fuels, beyond a de minimus quantity, as determined by the Energy Commission, shall result in the creation of a renewable energy credit.

electricity was generated and delivered by an eligible renewable energy source.”²⁸

4.1.2.3.2. Renewable and Environmental Attributes

The REC is more than a counter. Other than certain specified exceptions, the REC carries “all renewable and environmental attributes associated with the production of electricity from the eligible renewable energy resource. . .” underlying it. First and foremost, those attributes include lower, low, or no polluting emissions from the generation itself, and independence from the use of fossil fuels for the generation.²⁹

Less obvious is whether the attributes “associated with the production of electricity from the eligible renewable energy resource” include the benefits resulting from the reduction or elimination of fossil-fueled generation elsewhere in the electric power system. This is often referred to as the “avoided emission” of pollutants from fossil fuel generation. Although renewable generation can potentially avoid emission of several pollutants, the focus of the parties has been on avoided GHG emissions.

Reduction of GHG emissions is a central part of California’s climate change policy, principally embodied in the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32 (Núñez/Pavley), Stats. 2006, ch. 488. AB 32

²⁸ In WREGIS, the unit is one megawatt-hour (MWh). See WREGIS Operating Rules (June 4, 2007), § 2. The Operating Rules may be found at <http://www.wregis.org/content/blogcategory/26/47/>.

²⁹ RPS-eligible technologies are set out in Pub. Res. Code § 25741(b)(1), with small modifications as set forth in Pub. Util. Code § 399.12(c).

sets goals for the reduction of GHG emissions and establishes responsibility for implementation of the statutory requirements.³⁰

The question of the avoided GHG emissions attribute has been addressed by the parties in several rounds of comments.³¹ Fundamentally, parties advance one of two positions. The first, espoused by AReM, Calpine, EcoSecurities, IEP, the IOUs, and Sustainable Conservation, is that the REC embodies all aspects of “renewableness” required to comply with California's RPS, but does not include the emissions avoided from fossil fuel sources.³² The second, advanced principally by the Solar Alliance, CRS, and Powerex, is that the REC's renewable and environmental attributes include the avoided emissions.³³ CEERT, AReM, and UCS have suggested that it may not be necessary to resolve this issue in order to move forward with the use of TRECs for RPS compliance.

In order to ground our resolution of this issue, we make a brief foray into GHG compliance methodology. This is not intended to be a full or authoritative presentation, but simply to provide the concepts necessary for our further discussion.

³⁰ The Air Resources Board (ARB) is responsible for implementing AB 32. In R.06-04-009, we, jointly with the CEC, are engaged in providing recommendations to the ARB for implementing AB 32 in the electricity and natural gas sectors. Decisions in R.06-04-009 have noted that the use of tradable RECs for RPS compliance and the attributes and characteristics of the REC for RPS compliance will be addressed in R.06-02-012, this proceeding. *See* D.07-09-017, pp. 33-34; D.08-03-018, pp. 78-79.

³¹ These include, but are not limited to, comments on the REC white paper, pre- and post-workshop comments related to the Energy Division workshop held in September 2007, and the CRS comments and reply comments in May and June 2008.

³² We will refer to this as the “no avoided emissions” position.

³³ We will refer to this as the “avoided emissions included” position.

In its *Draft Scoping Plan*,³⁴ ARB makes a preliminary recommendation that California “implement a broad-based cap-and-trade program that links with other Western Climate Initiative Partner programs to create a regional market system.” (*Draft Scoping Plan*, p. 15.)³⁵ ARB explains that:

Cap and trade is a market-based approach to reduce pollution from sources such as industrial processes and power generation. The approach caps the total amount of GHG emissions and allows covered sources to find the least expensive way to comply.
Id., p. 16.

In a cap-and trade system, “[p]rovisions could be made to allow a limited use of surplus reductions that occur outside of the cap. These additional reductions are known as offsets. . .” (*Id.*) The *Draft Scoping Plan* defines offsets as “verifiable emission reductions whose ownership can be transferred to others.” It further explains that these emission reductions can be developed “from activities not otherwise regulated, covered under an emissions cap, or resulting from government incentives.” (*Id.*, p. 43.)³⁶

³⁴ ARB issued its *Climate Change Draft Scoping Plan* (June 2008 Discussion Draft) (*Draft Scoping Plan*) on June 26, 2008. It may be found at <http://www.arb.ca.gov/cc/scopingplan/document/draftscopingplan.pdf>. We take official notice of this document in accordance with Rule 13.9.

The *Draft Scoping Plan* makes clear that it is a draft of a plan. It anticipates substantial input from the public prior to the submission of a final draft scoping plan for additional public review before adoption by ARB. We therefore do not treat it as a definitive policy document, but adopt its vocabulary and explanations for GHG regulatory concepts.

³⁵ In D.08-03-018, we and the CEC recommended that ARB implement a cap-and-trade program for AB 32 compliance that includes but is not limited to the electricity sector.

³⁶ In order to be used for purposes of compliance with GHG reduction rules (which the *Draft Scoping Plan* refers to as a “compliance offset”), offsets “would be subject to

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We now turn to evaluation of the parties' proposals. Significantly, parties advance many of the same reasons to support both the “no avoided emissions” and “avoided emissions included” positions.

Parties want to make compliance with both RPS and AB 32 requirements as simple as possible, while preventing double counting of GHG attributes.³⁷ They want to encourage development of more renewable resources.³⁸ They want to recognize all the environmental benefits of RPS-eligible renewable generation.³⁹

Some parties also urge that the RPS compliance value of the REC be recognized as separate from the GHG offset value of the avoided emissions. The two sets of attributes would be treated as separate products, with separate markets.⁴⁰

Some parties assert that trying to give value to the RPS compliance component as well as the GHG avoided emissions component when both are in

stringent criteria and verification procedures to ensure. . .enforceability and consistency with AB 32 requirements.” (*Draft Scoping Plan*, p. 16.) Specifically, the emission reductions represented by a compliance offset must be “real, additional, verifiable, enforceable, and permanent.” (*Id.*, p. 43.) ARB is also developing methodologies for quantifying voluntary offsets. (*Id.*, p. 45.)

³⁷ Commenters on this point on the avoided emissions included side include CRS, Solar Alliance, and Powerex. On the no avoided emissions side they include IEP, AReM, and the IOUs.

³⁸ Commenters on this point advocating no avoided emissions: AReM, EcoSecurities IEP, SCE. Avoided emissions included: Solar Alliance.

³⁹ CRS, UCS, Solar Alliance, GPI.

⁴⁰ Commenters on this point in the avoided emissions included group: Solar Alliance, CRS, and Powerex. No avoided emissions: AReM, EcoSecurities, Calpine, SDG&E, and Sustainable Conservation.

the REC (the “avoided emissions included” position) could create a variety of problems. Several parties suggest that this approach would create difficulties for GHG accounting because of the complexities of accounting for the power once the REC has been sold separately from the underlying energy. The energy remaining after sale of the REC is treated as “null power.”⁴¹ As noted in the TRECs workshop presentations,⁴² for zero-GHG-emission renewable power, the GHG emissions value of the REC and the GHG emissions value of the null power must add to zero, because such renewable power does not physically add to the amount of GHG emissions in the atmosphere.⁴³ These parties argue that if a REC includes avoided emissions, it will be difficult to assign an emissions value to the null power left after the REC has been sold, in part because it is inherently difficult to quantify emissions avoided elsewhere in the electricity system.⁴⁴ The IOUs also argue that if we conclude that a REC includes avoided GHG emissions, we would be prejudging the development of AB 32 compliance rules that are the responsibility of ARB.

Other parties⁴⁵ argue more broadly that allowing the REC to count for RPS compliance and the associated avoided GHG emissions to count for GHG

⁴¹ See D.07-09-017, *mimeo.*, p. 33.

⁴² The presentations may be found at <http://www.cpuc.ca.gov/PUC/energy/electric/RenewableEnergy/misc/representations.htm>.

⁴³ More generally, in any GHG accounting regime, the sum of the emissions associated with the energy plus the emissions associated with the RECs must sum to the amount of emissions the generator actually produces in order to maintain the integrity of the emissions accounting regime.

⁴⁴ AReM, IEP, IOUs.

⁴⁵ GPI, TURN, EcoSecurities, SCE, and IOUs.

compliance (whether directly or by providing an offset) would be double counting. Double counting would occur, they point out, if a REC containing avoided emissions is used for both purposes, or if a REC is used for RPS compliance and the avoided emissions associated with the same renewable generation are used for GHG purposes. In either case, the benefits of the same renewable generation would be claimed in two different arenas. TURN, following CRS, puts this argument succinctly: once a REC is used for RPS compliance, it must extinguish the right of anyone else to transfer or claim benefit of the avoided emissions from the burning of fossil fuel.⁴⁶

We conclude that, in pursuit of broadly shared goals, the parties have proposed incompatible solutions. The proposals nevertheless have elements that should be used. We agree with those parties stating that a REC logically should include the attribute of avoided fossil fuel emissions, since this is among the benefits renewable generation is intended to produce. We also agree with those parties stating that a REC used for RPS compliance should not be used as a GHG offset, because it is clear from the very definition of an offset that, once counted for RPS compliance (and thus “otherwise regulated”), a REC can have no GHG offset value.

We therefore adopt GPI's characterization of the relationship between emissions from fossil fuel generation avoided by renewable generation and the use of renewable generation as offsets for GHG compliance.⁴⁷ GPI states that the

⁴⁶ TURN's Reply Comments Concerning the Definition of Renewable Energy Credits (June 11, 2008), pp. 1-2.

⁴⁷ See Post-Workshop Comments of the Green Power Institute on Tradable Renewable Energy Credits (Nov. 13, 2007), p. 16.

benefit of avoidance of fossil fuel use due to renewable energy production is clearly a component of the REC. But including this benefit in the REC should not result in the creation of any emissions offsets connected with the REC if the REC is retired for RPS compliance purposes.

Avoided GHG emissions may or may not have any value for GHG compliance purposes; indeed, they are likely to have no California GHG compliance value.⁴⁸ While this is ultimately a matter for ARB to decide, it is generally understood that under a multi-sector GHG cap and trade regime, the total GHG emissions within the cap are fixed, with the allowable level of emissions determined by the number and denomination of emission permits that have been issued. When renewable energy is generated rather than fossil-fueled energy, this does not change the total amount of GHG emissions allowed under the cap, since it does not change the number of permits in circulation. Thus, the generation of renewable energy does not “avoid” any GHG emissions; it simply frees up permits that can be used by other entities covered under the cap to emit those GHGs. In short, no emissions can be “avoided” below the fixed cap level. Although the avoided emissions attribute is included in the definition of the REC, under a cap, the avoided GHG emissions attribute should, in our view, have a zero value. Accordingly, the inclusion of avoided GHG emissions in a REC will not create any right to use those avoided emissions for GHG compliance purposes.⁴⁹

⁴⁸ See *Draft Scoping Plan*, p. 16, noting that offsets would need to be "surplus reductions that occur outside of the cap."

⁴⁹ We note, though this is not a basis of our decision, that our approach to the attributes of a REC is consistent with the view of a REC in current voluntary markets for GHG offsets and claims of renewable energy use. In its Comments on the Definition of a REC

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We believe that this approach is fully compatible with our recommendation, jointly with the CEC, to ARB regarding the point of regulation for GHG compliance in the electricity sector. In D.08-03-018, we recommended that the “deliverer” be the entity accountable for holding sufficient allowances to cover its GHG emissions.⁵⁰ As explained above, once a REC is used for RPS compliance (either before or after a GHG cap is imposed), the REC cannot also be used as a GHG emissions offset. In addition, once a GHG cap is imposed, RPS-eligible generation subject to a cap never avoids emissions. The “avoided emissions” will continue to be included in the REC, but the avoided emissions value will be zero; the balancing GHG emissions value of the null power will therefore also be zero. Thus – assuming that ARB adopts this analysis – our characterization of the REC will not require any RPS-eligible generation with zero GHG emissions to need allowances when delivered to the California grid.⁵¹

Including the avoided emissions attribute in a REC but not allowing a REC used for RPS compliance to count as an offset for GHG compliance purposes will

under CPUC §§ 399.11 *et seq.* (May 29, 2008), CRS states that a single MWh of renewable generation can be used either for compliance with a legal mandate or sale in a voluntary market product, but not both. CRS notes that the Green-e Climate Renewable Energy Protocol used in voluntary markets nationwide prohibits the sale of a GHG emission reduction product if the REC or the electricity associated with the REC is used for any compliance purpose. The protocol may be found at http://www.green-e.org/getcert_ghg_re_protocol.shtml.

⁵⁰ We defined “deliverer” as the first entity responsible for delivering electricity to the California grid.

⁵¹ We do not intend to anticipate how ARB will ultimately decide to account for renewable energy generation that has GHG emissions, such as geothermal. Nor do we intend to anticipate ARB's determination of whether GHG emissions from the use of biomass or biogas fuel to generate electricity create any compliance obligations under a GHG cap.

also prevent the sale of offsets that fail to meet the additionality criteria that are central to the GHG protocols that have been promulgated in recent years.⁵² According to these protocols, in order for emission reductions to give rise to a legitimate offset, they must be reductions beyond what would have happened under “business-as-usual” conditions.⁵³ If a renewable project would have happened irrespective of the opportunity to sell GHG offsets, then any avoided emissions attributed to that project are not additional.

Putting these general considerations into the RPS context, if an RPS-eligible generation facility sells its RECs to an RPS-obligated LSE, then the development of the generation facility would generally be considered business-as-usual because the RPS program with its mandate to procure renewable energy, which exists irrespective of the opportunity to sell GHG offsets, is presumed to be the catalyst for that project’s development.

The structure of WREGIS supports this approach. WREGIS ensures that a REC will be counted only once within the WREGIS system.⁵⁴ WREGIS tracks only whole RECs (which are called WREGIS Certificates). It does not currently track separate attributes. It also does not allow “disaggregation” of a REC once the WREGIS Certificate is retired; *i.e.*, once the REC is designated for a particular

⁵² See, for example, the protocols developed by the California Climate Action Registry, available at <http://www.climateactionregistry.org/tools/protocols.html>, as well as the Green-e protocol noted above.

⁵³ Business-as-usual is understood as a hypothetical scenario in which the project does not receive money for the proposed offset.

⁵⁴ If at some time in the future, WREGIS links to other tracking systems, then this assurance will be extended to any linked systems.

use (which WREGIS terms a “final use”).⁵⁵ Within WREGIS, it is not possible to pull out and separate any one attribute or set of attributes.⁵⁶ Thus, the avoided emissions attribute is indissolubly linked with all the other attributes throughout the REC's life in WREGIS.⁵⁷

While WREGIS can not override or replace statutory requirements, this feature supports our understanding of how including the avoided emissions attribute in the REC would work in practice. It is part of the REC, and, as part of the REC, can be used once and only once, at only one time. If the REC is retired in WREGIS for California RPS compliance, the *entire bundle of attributes in the REC* is retired. If the REC is retired in WREGIS for RPS compliance in another state, the entire bundle of attributes is likewise retired. If the REC is retired because it is being used as an offset for GHG emissions in the current voluntary market, or in some other context in the future, the entire bundle of attributes is likewise retired.⁵⁸ The REC, in sum, may be available for multiple purposes, but may be used for only one of them.

⁵⁵ See WREGIS Operating Rules, § 16.1.

⁵⁶ It is possible to put a WREGIS Certificate into a “reserve” account, which would allow the account holder to conduct transactions outside of WREGIS with the disaggregated attributes. But the reserve account can not currently be used to retire a REC for RPS compliance. See Operating Rules, § 18.1.

⁵⁷ Because the REC is permanently recorded in WREGIS, this would include its life after being retired for a particular purpose, *e.g.*, California RPS compliance.

⁵⁸ We note that the possibility that a REC could be retired for use as a GHG emission offset, rather than for RPS compliance, does not mean that a REC would meet specific requirements for use as an offset that may be imposed by ARB or any other governmental or voluntary agency.

We believe that, overall, our approach advances the goals of the RPS program without hindering or constraining the implementation of AB 32. Our approach allows the REC to embody all the attributes that cause renewable generation to be valued. It is compatible with a range of GHG accounting options, with only the fundamental requirement that when a REC is retired for use for one purpose, all its attributes are retired.⁵⁹

4.1.2.3.3. Exclusions

4.1.2.3.1.1. Emissions Reduction Credits

Section 399.12(h)(2) expressly excludes from the attributes of a REC “an emissions reduction credit issued pursuant to Section 40709 of the Health and Safety Code. . .”⁶⁰ The parties agree that this exclusion is a straightforward

⁵⁹ In their comments on the PD, both SCE and UCS propose one hypothetical future situation in which the REC definition in the PD might not yield a consistent treatment in terms of RPS compliance and GHG compliance accounting. As SCE explains, this is the situation in which California has a GHG emissions cap, and an RPS-eligible generator located in an uncapped state sells a REC to a California LSE and sells the associated energy to a different LSE in a different state. Only the REC is delivered to California. SCE states that the potential problem exists “because no energy is delivered to California from this transaction. . . [A]ccounting for the transaction's GHG implications is difficult if a REC cannot be used for both RPS and GHG counting purposes as suggested by the Proposed Decision.”

It is not necessary to resolve this question now. First, this example is purely hypothetical, since under current law the energy associated with a REC must be delivered for consumption by a California end-user customer in order for the REC to be used for RPS compliance. Second, by noting that the avoided emissions may have no GHG compliance value, the PD preserves ARB's ability to address this hypothetical situation if and when it chooses to do so. Finally, the assertion of one possible scenario in which the interaction of REC and GHG accounting might need further work does not affect our confidence in the REC definition we adopt.

⁶⁰ Section 40709 of the Health and Safety Code provides in relevant part:

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reference to the air pollution control system established by that statutory section. These credits may be required for electricity generation projects (especially biomass or biogas) to obtain necessary permits for development or expansion. They may be banked, to be used to allow future emissions increases. These credits are an integral part of the state's air pollution control regulatory system for stationary sources and thus are not available to be counted in a REC.

4.1.2.3.1.2. Reduction and Treatment Benefits

Also excluded by § 399.12(h)(2) are “any credits or payments associated with the reduction of solid waste and treatment benefits created by the utilization of biomass or biogas fuels.” GPI characterizes these benefits as “ancillary services” provided by the production of energy from biomass and biogas fuels. As PG&E points out, the benefits are based on the existence of two

(a) Every [air] district board shall establish by regulation a system by which all reductions in the emission of air contaminants that are to be used to offset certain future increases in the emission of air contaminants shall be banked prior to use to offset future increases in emissions. The system shall provide that only those reductions in the emission of air contaminants that are not otherwise required by any federal, state, or district law, rule, order, permit, or regulation shall be registered, certified, or otherwise approved by the district air pollution control officer before they may be banked and used to offset future increases in the emission of air contaminants. The system shall be subject to disapproval by the state board pursuant to Chapter 1 (commencing with Section 41500) of Part 4 within 60 days after adoption by the district.

(b) The system is not intended to recognize any preexisting right to emit air contaminants, but to provide a mechanism for districts to recognize the existence of reductions of air contaminants that can be used as offsets, and to provide greater certainty that the offsets shall be available for emitting industries.

(c) Notwithstanding subdivision (a), emissions reductions proposed to offset simultaneous emissions increases within the same stationary source need not be banked prior to use as offsets, if those reductions satisfy all criteria established by regulation pursuant to subdivision (a).

separable aspects of electricity production using biomass or biogas fuel: reduction or destruction of environmentally damaging waste or emissions, and production of electricity.

Sustainable Conservation and EcoSecurities state that the exclusion of these benefits is consistent with the California Climate Action Registry's (CCAR) protocol for reporting GHG emissions and benefits from projects to reduce GHG emissions from livestock waste (often called manure management).⁶¹ The key element in the CCAR's project definition is that a project must capture and combust methane gas. This activity is conceptually separate (and can be physically separate) from using the combustion of the methane gas as a means to produce electricity and displace electricity produced by fossil fuels. We explained this concept in some detail in Res. G-3410.

As GPI notes, this same two-step framework applies to the combustion of solid biomass, such as agricultural or wood waste. The fuel is solid, rather than methane gas, but the environmental benefits “upstream” of the electricity production (reduction of waste and/or emissions) are similar,⁶² and are similarly excluded from the REC.

⁶¹ CCAR was established by SB 527 (Sher), Stats. 2001, ch. 769. The protocol, titled *Livestock Project Report Protocol: Capturing and combusting methane from manure management systems* (June 2007), may be found at http://www.climateregistry.org/resources/docs/protocols/project/livestock/CCAR_Livestock_Project_Reporting_Protocol_June_2007.pdf. We take official notice of this document. (See Rule 13.9.)

⁶² We note that biomass fuel is more heterogeneous than biogas, and thus it is more complicated to track reductions in GHG emissions. That does not negate the existence of such reductions. We discussed the basis for finding GHG reductions in D.07-01-039, at pp. 18-19.

4.1.2.3.1.3. Only *de minimus* Use of Fossil Fuel

The use of nonrenewable fuels by an eligible renewable resource may not underlie the creation of a REC, unless the fossil fuel use is “a *de minimus* quantity, as determined by the Energy Commission.” (§ 399.12(h)(3).) The CEC has promulgated guidelines for determining whether fossil fuel use qualifies as *de minimus* for purposes of RPS-eligible energy generation. These guidelines cover a variety of facilities and circumstances, and would provide the basis for the CEC's determination of eligibility of the underlying generation.⁶³ WREGIS would track the RECs created in accordance with the statutory criteria.

4.1.2.3.4. Other Exclusions

In addition to the statutory exclusions, there are other common aspects of renewable energy transactions that should not be part of the REC. These elements are excluded from the Green Attributes set out in STC 2 and should likewise be excluded from a REC:

- energy, capacity, reliability or other power attributes;
- production tax credits and other tax incentives;
- fuel-related subsidies or “tipping fees” or subsidies for promoting local environmental benefits; and
- any emission reduction credits, other than those issued pursuant to § 40709 of the Health and Safety Code (which are already excluded by statute), encumbered or used for compliance with operating and/or air quality permits.

⁶³ See *Renewables Portfolio Standard Eligibility Guidebook*, pp. 19-20 (3d ed., December 2007), available at <http://www.energy.ca.gov/2007publications/CEC-300-2007-006/CEC-300-2007-006-ED3-CMF.PDF>.

4.1.3. Additional Requirements and Restrictions

Section 399.16 amplifies the sections addressing the definition and attributes of RECs by setting out prerequisites, conditions, and limits on the use of RECs for RPS compliance. We defer discussion of some of these issues until we decide whether to allow the use of TRECs for RPS compliance, since they relate to the market design and requirements for a TREC regime for RPS compliance. We address here those parts of § 399.16 that elaborate on the characteristics of the REC itself.

4.1.3.1. Delivery of Electricity

For RPS purposes, the “delivery” of electricity means “the electricity output of an in-state renewable electricity generation facility that is used to serve end-use retail customers located within the state.” (Pub. Res. Code § 25741(a).)⁶⁴ The CEC has determined that electricity “is deemed delivered if it is either generated at a location within the state⁶⁵ or is scheduled for consumption by

⁶⁴ Pub. Res. Code § 25741(a) provides:

‘Delivered’ and ‘delivery’ mean the electricity output of an in-state renewable electricity generation facility that is used to serve end-use retail customers located within the state. Subject to verification by the accounting system established by the commission pursuant to subdivision (b) of Section 399.13 of the Public Utilities Code, electricity shall be deemed delivered if it is either generated at a location within the state, or is scheduled for consumption by California end-use retail customers. Subject to criteria adopted by the commission, electricity generated by an eligible renewable energy resource may be considered “delivered” regardless of whether the electricity is generated at a different time from consumption by a California end-use customer.

The CEC has adopted criteria for RPS-eligible delivery in the *RPS Eligibility Guidebook*, pp. 23-26.

⁶⁵ A location within the state includes both facilities physically in California and those having their first point of interconnection to the WECC transmission system in California. See Pub. Res. Code § 25741(b).

California end-use retail customers. . ." (*RPS Eligibility Guidebook*, p. 23.) In the *RPS Eligibility Guidebook*, the CEC has further elaborated guidelines for the delivery of RPS-eligible energy from generation facilities with their first point of interconnection outside of California.⁶⁶

⁶⁶ Pub. Res. Code § 25471(b) establishes the criteria for an RPS-eligible facility, to be implemented by the CEC. It provides in relevant part:

(b) "In-state renewable electricity generation facility" means a facility that meets all of the following criteria:

(1) The facility uses biomass, solar thermal, photovoltaic, wind, geothermal, fuel cells using renewable fuels, small hydroelectric generation of 30 megawatts or less, digester gas, municipal solid waste conversion, landfill gas, ocean wave, ocean thermal, or tidal current, and any additions or enhancements to the facility using that technology.

(2) The facility satisfies one of the following requirements:

(A) The facility is located in the state or near the border of the state with the first point of connection to the transmission network within this state and electricity produced by the facility is delivered to an in-state location.

(B) The facility has its first point of interconnection to the transmission network outside the state and satisfies all of the following requirements:

(i) It is connected to the transmission network within the Western Electricity Coordinating Council (WECC) service territory.

(ii) It commences initial commercial operation after January 1, 2005.

(iii) Electricity produced by the facility is delivered to an in-state location.

(iv) It will not cause or contribute to any violation of a California environmental quality standard or requirement.

(v) If the facility is outside of the United States, it is developed and operated in a manner that is as protective of the environment as a similar facility located in the state.

(vi) It participates in the accounting system to verify compliance with the renewables portfolio standard by retail sellers, once established by the Energy Commission pursuant to subdivision (b) of Section 399.13 of the Public Utilities Code.

(C) The facility meets the requirements of clauses (i), (iii), (iv), (v), and (vi) in subparagraph (B), but does not meet the requirements of clause (ii) because it commences initial operation prior to January 1, 2005, if the facility satisfies either of the following requirements:

(i) The electricity is from incremental generation resulting from expansion or repowering of the facility.

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The CEC has determined that RPS-eligible “delivery” occurs if the RPS-eligible electricity is *either* generated at a location within the state *or* is scheduled for consumption by California end-use retail customers. (*RPS Eligibility Guidebook*, p. 23; emphasis added.) The further direction in § 399.16(a)(3) that the RPS-eligible electricity underlying a REC must be “delivered to a retail seller, the Independent System Operator [CAISO], or a local publicly owned utility” therefore provides an extra statutory assurance that RPS-eligible generation that is not deemed to be delivered by virtue of its in-state location, *i.e.*, RPS-eligible generation that meets the CEC delivery requirements for generation facilities located out of state, will be able to underlie a REC.⁶⁷ As Solar Alliance points out in comments on the proposed decision (PD), the two statutes together provide that all forms of RPS-eligible energy can give rise to a REC (subject to any other restrictions not related to delivery): generation from RPS-eligible facilities in-state; RPS-eligible distributed generation (DG) consumed on-site by the California customer; and generation from RPS-eligible facilities located outside California that meets the CEC's RPS delivery requirements.⁶⁸

(ii) The facility has been part of the existing baseline of eligible renewable energy resources of a retail seller established pursuant to paragraph (2) of subdivision (b) of Section 399.15 of the Public Utilities Code. . . .

In addition, Pub. Util. Code § 399.17 provides special rules for delivery of RPS-eligible generation for multi-jurisdictional utilities. These rules are not inconsistent with the more general requirements. See *RPS Eligibility Guidebook*, pp. 22-23.

⁶⁷ Information to verify compliance with the “delivery” requirement should be available in WREGIS.

⁶⁸ The CEC does not currently specify any elements of “delivery” that are specific to REC-only transactions. If the CEC were to do so in the future, the REC-specific

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4.1.3.2. Contracts Prior to January 1, 2005

In § 399.16(a)(5), the statute excludes from contributing to the creation of RECs any electricity generated “pursuant to any electricity purchase contract with a retail seller or a local publicly owned electric utility executed before January 1, 2005, unless the contract contains explicit terms and conditions specifying the ownership or disposition of those credits.” Even if the electricity generated pursuant to such a contract would meet all the other requirements for creating an associated REC, this section prohibits it unless the contract itself allocates REC ownership.

4.1.3.3. QF Contracts After January 1, 2005

Under § 399.16(a)(6), contracts with QFs executed after January 1, 2005 likewise can not give rise to RECs, even if all other requirements for the creation of RECs (including allocation of REC ownership) would be met by the contract.

The statute thus imposes restrictions on RECs based on the nature of the contract for the underlying electricity generation.⁶⁹ We will address the

definitions would apply to REC-only transactions, but not to delivery of bundled energy.

⁶⁹ It is important to note that the RPS eligibility of the electric generation itself is not affected by either of these restrictions. In the case of contracts prior to January 1, 2005, § 399.16(a)(5) provides that “[d]eliveries under those contracts shall be tracked through the accounting system described in subdivision (b) of Section 399.13 and included in the baseline quantity of eligible renewable energy resources of the purchasing retail seller pursuant to Section 399.15.”

For QF contracts after January 1, 2005, § 399.16(a)(6) provides that “[d]eliveries under the electricity purchase contracts shall be tracked through the accounting system described in subdivision (b) of Section 399.13 and count toward the renewables portfolio standard obligations of the purchasing retail seller.”

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implications of those restrictions for RPS compliance accounting if and when we implement a system of TRECs for RPS compliance.

4.2. Characterization of the REC

Putting all the elements we have discussed together, we find that a REC for California RPS compliance is a certificate of proof, issued through WREGIS, that one MWh of electricity was generated by an RPS-eligible renewable energy resource and was delivered for consumption by California end-use retail customers. A REC includes all renewable and environmental attributes associated with the production of electricity from the eligible renewable energy resource, including any avoided emission of pollutants to the air, soil or water; any avoided emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or any other GHGs that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of global climate change;⁷⁰ and the reporting rights to these avoided emissions, such as Green Tag reporting rights.⁷¹

The CEC is developing a method to implement this requirement.

⁷⁰ Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the definition of the REC, this definition does not create any right to use those avoided emissions to comply with any GHG regulatory program.

⁷¹ Green Tag reporting rights are the right to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party and include without limitation those Green Tag reporting rights accruing under Section 1605(b) of the Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program.

A REC does not include any emissions reduction credit issued pursuant to § 40709 of the Health and Safety Code or any credits or payments associated with the reduction of solid waste or treatment benefits created by the utilization of biomass or biogas fuels. A REC also does not include any energy, capacity, reliability or other power attributes of the generation; any tax credits or other financial incentives in the form of credits, reductions, or allowances associated with the generation that are applicable to a state or federal income taxation obligation; any fuel-related subsidies or “tipping fees” or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits; and emission reduction credits (whether issued pursuant to § 40709 of the Health and Safety Code or any other authority) that are encumbered or used by the generator for compliance with local, state, or federal operating and/or air quality permits.

The electricity underlying a REC must be delivered for consumption by California end-use retail customers in accordance with the definition of delivery implemented by the CEC.

No REC may be created based on any electricity generated pursuant to any contract with a California retail seller or a local publicly-owned electric utility executed before January 1, 2005, unless the contract contains explicit terms and conditions specifying the ownership or disposition of the RECs. A REC may not be created based on any electricity generated pursuant to a contract with a QF that was executed after January 1, 2005.

A REC can not be created with respect to electricity generated by an eligible renewable energy resource attributable to the use of nonrenewable fuels, beyond a *de minimus* quantity as determined by the CEC.

This characterization of a REC is more expansive than the definition of a WREGIS Certificate set out in the WREGIS Operating Rules.⁷² Because WREGIS will be used by jurisdictions throughout the WECC, it necessarily does not include certain California-specific characteristics, such as the limitation on the creation of RECs associated with electric generation from QFs. In most other regards, our characterization of the REC and the WREGIS definition are consistent, if not identical. With respect to two issues, however, we believe that the greater precision of our formulation should be adopted by WREGIS. The

⁷² The definition, found in § 2 of the Operating Rules, has two pieces. The first is:

Certificate: The term “Certificate,” as used in this document, refers to a WREGIS Certificate. A WREGIS Certificate represents all Renewable and Environmental Attributes from one MWh of electricity generation from a renewable energy Generating Unit registered with WREGIS or a Certificate imported from a Compatible Registry and Tracking System and converted to a WREGIS Certificate. The WREGIS system will create exactly one Certificate per MWh of generation that occurs from a registered Generating Unit or that is imported from a Compatible Registry and Tracking System. Disaggregation of certificates is not currently allowed within WREGIS.

The second, which defines the term "renewable and environmental attributes" is:

Renewable and Environmental Attributes: Any and all credits, benefits, emissions reductions, offsets and allowances, howsoever entitled, attributable to the generation from the Generating Unit, and its displacement of conventional Energy generation. Renewable and Environmental Attributes do not include (i) any energy, capacity, reliability or other power attributes from the Generating Unit, (ii) production tax credits associated with the construction or operation of the Generating Unit and other financial incentives in the form of credits, reductions or allowances associated with the Generating Unit that are applicable to a state, provincial or federal income taxation obligation, (iii) fuel-related subsidies or “tipping fees” that may be paid to the seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by the

Footnote continued on next page

first is our use of the phrase “avoided emission of pollutants,” rather than “displacement of conventional energy generation.” We believe that our phrasing conveys the area of regulatory concern, rather than a more diffuse concept. The second is the footnote appended to the “avoided emissions” attribute, clarifying that such an attribute may or may not have any value for GHG compliance. These clarifications should apply generally to all jurisdictions using WREGIS, and will aid in preventing confusion among WREGIS users about the value (both regulatory and monetary) of a REC.

4.3. Conforming Language of STC 2

Several parties, including Sustainable Conservation and GPI, have pointed out an inconsistency between the language of STC 2 and the language of SB 107 in relation to biomass and biogas projects. STC 2 provides in part:

If the Project is a biomass or *landfill gas* facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project. [Emphasis added.]

SB 107, however, identifies "biomass or *biogas* fuels" (emphasis added) as the relevant category. The original STC 2 included only landfill gas. Parties have suggested various adjustments to STC 2, some of which we have adopted.⁷³

Generating Unit for compliance with local, state, provincial or federal operating and/or air quality permits.

⁷³ Some of this work has been done in R.06-05-027. The Amended Scoping Memo and Ruling of Assigned Commissioner Regarding Phase 2 of Tariff And Standard Contract Implementation for RPS Generators (June 5, 2008) points out that any further work on STCs in relation to RECs is more appropriately addressed in this proceeding.

In order to make STC 2 consistent in its language with SB 107, we now change “landfill gas” to “biogas.”

We also conform STC 2 to our treatment of avoided emissions in the REC, by using “avoided emission of pollutants,” rather than “displacement of conventional energy generation,” and adding the cautionary footnote stating that any avoided emissions conveyed as part of the Green Attributes in a bundled electricity transaction may or may not have any GHG compliance value. This is intended simply to prevent inconsistency between the treatment of avoided emissions in the REC definition and the Green Attributes definition; it is not intended to be a substantive change to the requirements for Green Attributes.

The complete current text of STC 2, with these changes, is set out in Appendix B.

Parties have made other suggestions for changes in STC 2. As we consider whether to authorize the use of TRECs, additional changes to STCs may be in order.

5. Next Steps

Section 399.16 allows us to authorize the use of TRECs for RPS compliance, but does not require us to do so. We will examine the pros and cons in a forthcoming decision. If we allow the use of TRECS, we will also set rules for a TREC market and for integrating the use of TRECs into RPS compliance rules.

In addition, § 399.16(a)(1) requires that:

Prior to authorizing any renewable energy credit to be used toward satisfying annual procurement targets, the commission and the Energy Commission shall conclude that the tracking system established pursuant to subdivision (c) of Section 399.13, is operational, is capable of independently verifying the electricity generated by an eligible renewable energy resource and delivered to the retail seller, and can ensure that renewable energy credits shall

not be double counted by any seller of electricity within the service territory of the Western Electricity Coordinating Council (WECC).

This Commission and the CEC decided to implement this statutory provision through a joint staff report evaluating the tracking system with respect to the statutory criteria. Both commissions released the Draft Joint Agency Staff Report in March 2008, proposing the criteria and the evaluation methods to be used in that determination. The CEC's Renewables Committee held a workshop on March 17, 2008 to receive public comment on the Draft Staff Report. Since that time, the two staffs have been collaboratively revising and developing final conclusions for the Report. Energy Division staff will issue the final Draft Report by means of a draft resolution. After public comment on the draft resolution and any necessary revisions to the Draft Report, both agencies will adopt the identical final Report. We will do so by resolution; the CEC will adopt the Report at one of its business meetings.

We will review STC 2 and other standard terms and conditions of bundled RPS contracts in the context of our examination of the use of TRECs for RPS compliance.

The assigned Commissioner and/or assigned ALJ may issue any rulings necessary for completion of these steps.

Outside of this proceeding, we intend to work with the WREGIS Committee and other stakeholders to clarify the definition of a REC in WREGIS to reduce confusion among WREGIS users about the value of the REC's attributes.

Further, we will continue to examine the GHG accounting implications of RPS procurement, especially with respect to RECs, in our work with the CEC advising ARB on AB 32 implementation issues.

Finally, we necessarily must consider the possibility that we will need to revisit some aspects of this decision. The landscape within which our RPS program functions is always changing, but a large number of changes may impact it in the near future. Our state may increase its RPS goals to 33% of retail sales by 2020. The full implementation of AB 32 may lead to other changes as well. In addition, the further development of regional GHG reduction strategies, expanded regional RPS goals, changes in WREGIS capabilities, and possible federal legislation may all lead us to review our RECs definition.

6. Comments on Proposed Decision

The proposed decision of ALJ Simon in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on August 4, 2008 by AReM; Calpine; CEERT; CRS; DRA; GPI; IEP; Mountain Utilities; PG&E; Powerex; SCE; SDG&E; SMUD; Solar Alliance; TURN; and UCS. Reply comments were filed on August 11 by AReM; DRA; GPI; PG&E; SCE; SMUD; Large-scale Solar Alliance (LSA); and Wal-Mart.⁷⁴ We have carefully considered all comments and reply comments and made changes to the PD where appropriate.

Most comments focus on the Environmental and Renewable Attributes aspect of the REC definition set forth in the PD. The principal topics noted in the comments are both GHG accounting issues: the treatment of the null power resulting from the transfer of a REC and the treatment of the avoided emissions value of a REC associated with RPS-eligible generation from a region not subject

⁷⁴ LSA and Wal-Mart each filed a Motion for Party Status with their reply comments. Those motions were granted on August 14, 2008.

to a GHG cap, for which the associated energy is not delivered to California. The PD has been revised to expand and clarify the discussion of the relationship of the definition of RECs for RPS compliance to the developing compliance regime under AB 32 with respect to these and other topics, mindful that final authority for AB 32 implementation rests with ARB.

Some commenters note that ambiguities in the PD's discussion of "delivery" of electricity for RPS purposes impacts the REC definition.⁷⁵ The discussion of delivery has been clarified.⁷⁶ CEERT and Powerex suggest that greater precision is needed in the REC definition about delivery requirements. The wording of the definition has been revised.

Commenters ask us both to slow down and to speed up our consideration of issues related to TRECs. SDG&E requests that the PD be withdrawn, or at least delayed until after ARB finalizes its *Draft Scoping Plan*. AReM and CEERT urge that we order staff to work on TRECs so that a PD on TRECs can be issued essentially immediately. We decline both suggestions. The Second Amended Scoping Memo clearly sets out the course for this proceeding, which we adopt in our Next Steps section of this decision.

Additional revisions have been made to improve clarity and consistency, and to correct minor errors.

⁷⁵ See, e.g., comments of AReM, CEERT, Powerex; Solar Alliance; reply comments of GPI, PG&E, and Wal-Mart.

⁷⁶ Mountain Utilities also raises a question about whether it will be able to meet the grid-connection requirements that it asserts WREGIS imposes for generation to give rise to a WREGIS Certificate. Because this appears to be an issue entirely within the purview of WREGIS, we do not address it here. The RPS eligibility of any utility-owned renewable generation Mountain Utilities chooses to deploy will be determined by the CEC.

7. Assignment of Proceeding

Michael R. Peevey is the Assigned Commissioner and Anne E. Simon and Burton W. Mattson are the assigned ALJs for this proceeding.

Findings of Fact

1. The attributes of a REC have not been definitively specified by this Commission.
2. RECs are playing an increasing part in several important aspects of energy policy, including participation in net-metering, the California Solar Initiative, the Self-Generation Incentive Program, tariffs or standard contracts for utilities' purchase of RPS-eligible generation from certain water and wastewater facilities, and voluntary programs reducing emissions of GHG.
3. SB 107 authorizes, but does not require, this Commission to allow the use of tradable RECs for RPS compliance.
4. Because of the importance of RECs in a variety of areas of energy policy, it is reasonable to develop a definition and characterize the attributes of a REC in advance of, and independent of, any decision on the use of tradable RECs for RPS compliance.
5. Once a REC has been retired for RPS compliance purposes, the use of the REC as an offset for emissions of GHGs or other pollutants would be inconsistent with California's regulatory policy and the policy of voluntary offset markets.
6. STC 2 of PPAs for RPS-eligible energy uses language that in its use of the term "landfill gas," rather than "biogas," is not consistent with the language of SB 107.
7. It is reasonable to make the language of STC 2 consistent with the language of SB 107 on the use of the term "biogas" in advance of a more comprehensive

review of RPS STCs in the context of a possible authorization of the use of tradable RECs for RPS compliance.

8. It is reasonable to revise the language of STC 2 to be consistent with the treatment of avoided emissions in the definition of a REC.

Conclusions of Law

1. A REC should be defined to include all the attributes necessary to conform to statutory definitions and meet all legal requirements, and to exclude the attributes prohibited from a REC or otherwise inappropriate or inconsistent with any legal requirements.

2. A REC should be defined to minimize the likelihood of double counting of any of its attributes.

3. STC 2 should be revised to use the term "biogas," rather than "landfill gas," consistent with the language of SB 107.

4. STC 2 should be revised to be consistent with the treatment of avoided emissions in the definition of a REC.

5. This decision should be effective immediately to permit a timely update of STC 2 and provide greater clarity about RECs for several aspects of energy policy.

O R D E R

IT IS ORDERED that:

1. A renewable energy credit (REC) for compliance with the California renewables portfolio standard (RPS) is:

a certificate of proof, issued through the Western Renewable Generation Information System, that one megawatt-hour of electricity was generated by an RPS-eligible renewable energy

resource and delivered for consumption by California end-use retail customers. A REC includes all renewable and environmental attributes associated with the production of electricity from the eligible renewable energy resource, including any avoided emission of pollutants to the air, soil or water; any avoided emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, or any other greenhouse gases that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of global climate change;⁷⁷ and the reporting rights to these avoided emissions, such as Green Tag reporting rights.⁷⁸

A REC does not include any emissions reduction credit issued pursuant to § 40709 of the Health and Safety Code or any credits or payments associated with the reduction of solid waste or treatment benefits created by the utilization of biomass or biogas fuels. A REC also does not include any energy, capacity, reliability or other power attributes of the generation; any tax credits or other financial incentives in the form of credits, reductions, or allowances associated with the generation that are applicable to a state or federal income taxation obligation; any fuel-related subsidies or “tipping fees” or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits; or emission reduction credits (whether issued pursuant to § 40709 of the Health and Safety Code or any

⁷⁷ Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the definition of the REC, this definition does not create any right to use those avoided emissions to comply with any GHG regulatory program.

⁷⁸ Green Tag reporting rights are the right to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party and include without limitation those Green Tag reporting rights accruing under Section 1605(b) of the Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program.

other authority) that are encumbered or used by the generator for compliance with local, state, or federal operating and/or air quality permits.

The electricity underlying a REC must be delivered for consumption by California end-use retail customers, in accordance with the definition of delivery implemented by the California Energy Commission (CEC).

No REC may be created based on any electricity generated pursuant to any contract with a California retail seller or a local publicly owned electric utility executed before January 1, 2005, unless the contract contains explicit terms and conditions specifying the ownership or disposition of the RECs. A REC may not be created based on any electricity generated pursuant to a contract with a qualifying facility pursuant to the Public Utility Regulatory Policies Act of 1978 that was executed after January 1, 2005.

A REC can not be created with respect to electricity generated by an eligible renewable energy resource attributable to the use of nonrenewable fuels, beyond a *de minimus* quantity as determined by the CEC.

2. Standard Term and Condition number 2 of power purchase agreements for bundled energy (energy, RECs, and all Green Attributes) for compliance with the California RPS program is revised as set out in Appendix B hereto.

This order is effective today.

Dated August 21, 2008, at San Francisco, California.

MICHAEL R. PEEVEY
President
DIAN M. GRUENEICH
JOHN A. BOHN
RACHELLE B. CHONG
TIMOTHY ALAN SIMON
Commissioners

APPENDIX A-1

Standard Terms and Conditions from Appendix A (pp. A2-A3) of D.04-06-014

(2) DEFINITION AND OWNERSHIP OF RECs (MAY NOT BE MODIFIED)

“Environmental Attributes” shall be added as a new General Definition in Article One of the Agreement as follows:

“Environmental Attributes” means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Unit(s), and its displacement of conventional energy generation. Environmental Attributes include but are not limited to: (1) any avoided emissions of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄) and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere; and (3) the reporting rights to these avoided emissions such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser’s discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on kWh basis and one Green Tag represents the Environmental Attributes associated with one (1) MWh of energy. Environmental Attributes do not include (i) any energy, capacity, reliability or other power attributes from the Unit(s), (ii) production tax credits associated with the construction or operation of the energy projects and other financial incentives in the form of credits, reductions, or allowances associated with the project that are applicable to a state or federal income taxation obligation, (iii) fuel-related subsidies or “tipping fees” that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular pre-existing pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by the Unit(s) for

compliance with local, state, or federal operating and/or air quality permits. If Seller's Unit(s) is a biomass or landfill gas facility and Seller receives any tradable Environmental Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Environmental Attributes to ensure that there are zero net emissions associated with the production of electricity from such facility."

New Section 3.4 shall be added to the Agreement as follows:

"3.4 Environmental Attributes. Seller hereby provides and conveys all Environmental Attributes from the Unit(s) to Buyer as part of the Product being delivered, as such term is described in the applicable Transaction confirmation for the period set forth in such confirmation. Seller represents and warrants that Seller holds the rights to all Environmental Attributes from the Unit(s), and Seller agrees to convey and hereby conveys all such Environmental Attributes to Buyer as included in the delivery of the Product from the Unit(s)."

(END OF APPENDIX A-1)

APPENDIX A-2

Standard Terms and Conditions, D.07-02-011, pp. 41-42,
Modified by D.07-05-057¹

“**Green Attributes**” means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its displacement of conventional Energy generation. **Green Attributes** include but are not limited to: Renewable Energy Credits, as well as: (1) any avoided emissions of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), **nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride** and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, **or otherwise by law,** to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere; (3) the reporting rights to these avoided emissions such as Green Tag Reporting Rights [and **Renewable Energy Credits**]. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser’s discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on a **MWh** basis and one Green Tag represents the **Green Attributes** associated with one (1) MWh of Energy. **Green Attributes** do not include (i) any energy, capacity, reliability or other power attributes from the Project, (ii) production tax credits associated with the

¹ **Bold** words are changes to wording in App. A of D.04-06-014 made by D.07-02-011. Underlined words are additions made by D.07-05-057; [bracketed] words are deletions made by D.07-05-057.

construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the project that are applicable to a state or federal income taxation obligation, (iii) fuel-related subsidies or “tipping fees” that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular preexisting pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits. If the Project is a biomass or landfill gas facility and Seller receives any tradable **Green** Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient **Green** Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project.

- 3.4 **Green** Attributes. Seller hereby provides and conveys all **Green** Attributes from the Unit(s) to Buyer as part of the Product being delivered, as such term is described in the applicable Transaction confirmation for the period set forth in such confirmation. Seller represents and warrants that Seller holds the rights to all **Green** Attributes from the Unit(s), and Seller agrees to convey and hereby conveys all such **Green** Attributes to Buyer as included in the delivery of the Product from the Unit(s).

(END OF APPENDIX A-2)

APPENDIX B

Standard Term and Condition 2:

“Green Attributes” means any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, attributable to the generation from the Project, and its avoided emission of pollutants. Green Attributes include but are not limited to Renewable Energy Credits, as well as: (1) any avoided emission of pollutants to the air, soil or water such as sulfur oxides (SO_x), nitrogen oxides (NO_x), carbon monoxide (CO) and other pollutants; (2) any avoided emissions of carbon dioxide (CO₂), methane (CH₄), nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride and other greenhouse gases (GHGs) that have been determined by the United Nations Intergovernmental Panel on Climate Change, or otherwise by law, to contribute to the actual or potential threat of altering the Earth’s climate by trapping heat in the atmosphere;¹ (3) the reporting rights to these avoided emissions, such as Green Tag Reporting Rights. Green Tag Reporting Rights are the right of a Green Tag Purchaser to report the ownership of accumulated Green Tags in compliance with federal or state law, if applicable, and to a federal or state agency or any other party at the Green Tag Purchaser’s discretion, and include without limitation those Green Tag Reporting Rights accruing under Section 1605(b) of The Energy Policy Act of 1992 and any present or future federal, state, or local law, regulation or bill, and international or foreign emissions trading program. Green Tags are accumulated on a MWh basis and one Green Tag represents the Green Attributes associated with one (1) MWh of Energy. Green Attributes do not include (i) any energy, capacity, reliability or other power attributes from the Project, (ii) production tax credits associated with the construction or operation of the Project and other financial incentives in the form of credits, reductions, or allowances associated with the project that are applicable to a state or federal income taxation obligation, (iii) fuel-related subsidies or “tipping fees” that may be paid to Seller to accept certain fuels, or local subsidies received by the generator for the destruction of particular

¹ Avoided emissions may or may not have any value for GHG compliance purposes. Although avoided emissions are included in the list of Green Attributes, this inclusion does not create any right to use those avoided emissions to comply with any GHG regulatory program.

preexisting pollutants or the promotion of local environmental benefits, or (iv) emission reduction credits encumbered or used by the Project for compliance with local, state, or federal operating and/or air quality permits. If the Project is a biomass or biogas facility and Seller receives any tradable Green Attributes based on the greenhouse gas reduction benefits or other emission offsets attributed to its fuel usage, it shall provide Buyer with sufficient Green Attributes to ensure that there are zero net emissions associated with the production of electricity from the Project.

3.2. Green Attributes. Seller hereby provides and conveys all Green Attributes associated with all electricity generation from the Project to Buyer as part of the Product being delivered. Seller represents and warrants that Seller holds the rights to all Green Attributes from the Project, and Seller agrees to convey and hereby conveys all such Green Attributes to Buyer as included in the delivery of the Product from the Project.

(END OF APPENDIX B)