RPS Implementation, Phase 2

CEC-CPUC Collaborative Staff Workshop

SB 1078 RPS Certification Process and Accounting System

May 13, 2003

I. INTRODUCTION:

SB 1078 allocates the following Renewable Portfolio Standard (RPS) implementation responsibilities to the California Energy Commission (Energy Commission or CEC):

> PUC 399.13. The Energy Commission shall do all of the following:
> (a) Certify eligible renewable energy resources that it determines meet the criteria described in subdivision (a) of Section 399.12.
> (b) Design 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. In establishing the guidelines governing this system, the Energy Commission shall collect data from electricity market participants that it deems necessary to verify compliance of retail sellers, in accordance with the requirements of this article and the California Public Records Act (Chapter 3.5 (commencing with Section 6250) of Division 7 of Title 1 of the Government Code). In seeking data from electrical corporations, the Energy Commission shall request data from the commission. The commission shall collect data from electrical corporations and remit the data to the Energy Commission within 90 days of the request.

The purpose of this workshop is to solicit input from interested parties on:

1. Establishing a process to certify eligible renewable energy
2. Developing an RPS accounting and verification system

Background materials on tracking systems are provided in Appendix A and B. Appendix A provides some key definitions, a summary of verification methodologies by other states that have an RPS, and references for further information. Appendix B provides a comparison of existing RPS tracking systems employing renewable energy certificates.

II. QUESTIONS:

A. Certification Process for Eligible Renewable Energy Resources

Today, renewable generation facilities can register with the CEC for several purposes:

A) SB 1305 Power Source Disclosure Program;
B) The New Renewable Resources Account;
C) The Existing Renewable Facilities Program.

1. How does the implementation of the California RPS change the scope of registration of renewable generation facilities?
   Should all renewable generation facilities in the state be registered?
2. Under the RPS, the CEC will be responsible for certifying existing and new renewable generation facilities wishing to qualify for SB 1038 funding and/or RPS compliance. Certification of renewable generation facilities will be required for facilities included in baseline, those that are eligible to meet the annual obligation, and those that are eligible for supplemental energy payments.
   Are there any other certification categories that should be considered?
3. Under what circumstances would certification of renewable generation facilities need to be renewed, updated, amended or withdrawn?
4. Currently, registration of renewable generation facilities includes a Declaration statement confirming the accuracy of the application information.
   Does the certification of facilities for RPS purposes change the standard of review by the CEC for applications for registration or certification of renewable generation facilities?
   Should the CEC physically perform random audits at certified facilities?
5. What data sources should be acceptable for reporting related to certification of eligible renewable generation facilities?
6. What kind of data and documentation should facilities be required to collect and maintain to substantiate their use of renewable fuels, as in the case of biomass or solid waste conversion facilities, or their water use, in the case of small hydro?

B. Accounting and Verification System

Recognizing that SB 1078's RPS requirements took effect at the beginning of 2003, that the California Public Utilities Commission (CPUC) 2002 interim renewable energy procurement may result in renewable generation that counts towards energy suppliers' RPS baseline and annual additional obligations, and that the development of an optimal accounting system could take a year or more to put into place, the Energy Commission believes an interim approach to RPS verification will be required in the near term. Therefore, the workshop will address:

1. What are the ultimate needs (uses, data and data sources) for an optimal accounting system?
2. What are the options for an interim system until the optimal system can be put into place?

Please address your responses, to both the interim and optimal accounting system.

For the purpose of this workshop, a *Contract-path Accounting System* refers to an accounting methodology whereby individual contracts and financial settlement data are used to verify renewable purchases. Such a system usually involves some sort of manual review of contracts and receipts, though the information may be entered into a database or otherwise put into an electronic format.

For the purpose of this workshop, *an Electronic (certificate-based) Accounting System* refers to a system whereby the financial settlement data is automatically entered into an electronic system, eliminating the need to do manual review of contracts or receipts. Certificates are issued by the program administrator for each increment of electricity generated. Once issued, certificates are deposited into the certificate owner's "account," usually the first point of deposit is the generator. The certificates can be transferred between accounts (e.g. from the generator to a load-serving entity) and used as a mechanism to verify that a company has acquired enough renewable energy to fulfill their RPS obligation. Both the buyer and seller must confirm the transaction before it is officially entered into the system (e.g. quantity and whether bundled or unbundled with energy).

Each type of accounting system can accommodate either bundled renewable energy (energy and renewable certificates bundled together) or renewable certificates sold separately. The type of accounting system does not prejudge the question of whether or how renewable certificates will be used for RPS compliance. The tracking system is inherently policy neutral, though policy decisions will influence its functional specifications.

Background information about accounting systems used for compliance verification in other states with renewable portfolio standards is attached in Appendix A and B.

Below is a list of questions intended to stimulate open discussion in the workshop. These questions are sequenced so that discussion in later questions builds upon information developed in earlier questions. Therefore, you are encouraged to read through and think about your responses to all the questions. Parties are also encouraged to raise other questions that apply to the topics at the workshop.

Accounting System Purposes

The primary uses for an optimal accounting system as outlined in the legislation include:

- *RPS Tracking (for both IOU and ESP compliance with the RPS)*
  - *i. Annual RPS targets*
  - *ii. Flexible compliance*
  - *iii. Prevent double counting with other state RPS requirements*
- *Retail Product Claim substantiation*

1. Are there any other primary functions that an optimal accounting system should be designed to accommodate?

2. How do you interpret the requirement that the system be used to verify 'retail product claims' (does this mean fuel source disclosure)? Does 'retail product claims' mean anything more than this?

The following is a list of secondary uses for which such an accounting system might be designed:

a. *Non-RPS renewable transactions;*
b. *As an issuing body for renewable energy certificates that might be sold in a voluntary market*.
c. *As a verification tool to be used by other states (to verify their RPS and product claim rules).*

3. Are there any other secondary functions for which such an optimal accounting system might be designed?

4. Which, if any, of these secondary functions do you think the optimal accounting system should be designed to address?

5. Which, if any, of these secondary functions do you think an interim accounting should be designed to address?

Accounting System Geographic Scope

6. If imported or renewable energy generated outside of California is eligible for the California RPS, is there any additional data (beyond what is being collected for CA generators) that will be needed or should be collected under either a contract-path or electronic accounting system?

7. Should the accounting system only account for California RPS-eligible renewable generation, or should it be part of a larger system such as a

Western Electricity Coordinating Council -wide system? Why? If a WECC-wide system should be developed, that is the recommended process for doing so?

8. If California does not participate in a western states accounting system, are there reconciliation needs with other state accounting systems? If yes, what?

9. Should data collection be addressed for customer-sited and off-grid generation in the optimal accounting system? In the interim accounting system? If so, then how?

Facilitating Broad Retail Provider Compliance

10. Should the optimal accounting system used for the investor owned utilities also be used for other California retail providers? What about the interim system?

11. Do any of the accounting system options described in the background materials have particular design characteristics that make them especially effective in facilitating other retail providers' compliance with the RPS?

Sequencing of Accounting System Design

Recognizing that SB 1078's RPS requirements took effect at the beginning of 2003, that the CPUC's 2002 interim renewable energy procurement may result in renewable generation that counts towards energy suppliers' RPS baseline and annual additional obligations, and that the development of an optimal accounting system could take a year or more to put into place, the collaborative staff believes an interim approach to RPS verification may be required in the near term.

12. How should an interim system be designed?

13. Is it possible to adapt any existing CEC or CPUC systems to be used for interim system needs? If so, which and how?

Type of Accounting System

For the purpose of this workshop, accounting system options have been categorized as either "contract-path" or "automated electronic" systems. Contract-path options typically verify claims or renewable purchases through a manual review of electricity contracts and settlement data. Automated Electronic systems typically verify claims or renewable purchases by receiving electronic, settlement quality data on generation and wholesale transactions and maintaining an electronic database and accounting system with this information.

14. Are there any other accounting and verification options that the Energy Commission should consider?

15. What are the advantages and disadvantages of a contract-path system?

16. What are the advantages and disadvantages of an automated electronic system?

17. What are the advantages and disadvantages of any other accounting system identified in question # 14 above?

18. Does the current and future uncertainty about the use of renewable certificates in California impact the type of accounting system that should be developed?

Types of Information the Accounting System will Track

19. What types of data are required to verify RPS compliance (under a contract-path system vs. an automated electronic system)?

20. Do data or system needs differ for verification of baseline compliance versus additional annual obligation compliance?

21. What types of data are required 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 (under a contract-path system vs. an electronic system)?

22. What types of data are required to verify product claims under a contract-path system vs. an electronic system?

23. Can product claims and RPS compliance both be verified using the same type of accounting system?

24. Secondary Functions: What types of data are required to track voluntary wholesale trading of renewable energy or renewable energy certificates (what are the sources of such data under a contract-path system vs. an automated, electronic system)?

25. Is the collection of these data compatible with other data collection described above?

26. In the chart below, indicate what entities (businesses, organizations, etc.) would provide the data that is required by the accounting system:

Purpose of Accounting System	**Contract Path (CP): Data Source**	**Automatic Electronic (AE): Data Source**	**Other: (If not CP or AE)**
RPS Compliance:			
Baseline			
Additional			
Prevent Double Counting			
Verify Product Claims			
Verify Voluntary Sales			
Other:			

27. Indicate for the table above whether there are any concerns about the validity of data from any of the sources.

Implementation

For both the interim and optimal systems:

28. Should the accounting system be web accessible?

29. What data should be available to the public?

30. How frequently should it be updated?

Appendix A: Background Materials for Phase 2 RPS Workshop May 13, 2003

I. Definitions

A *Contract-path Accounting System* refers to an accounting methodology whereby individual contracts and financial settlement data are used to verify renewable purchases. Such a system usually involves some sort of manual review of contracts or some other verification of purchases, though the information may be entered into database or otherwise put into an electronic format.

An *Electronic (certificate-based) Accounting System* refers to a system whereby the financial settlement data is automatically entered into an electronic system and data transfers are typically automated, eliminating the need to do manual review of contracts or receipts. Certificates are issued by the program administrator for each increment of electricity generated. Once issued, certificates are deposited into the certificate owner's "account," usually the first point of deposit is the generator. The certificates can be transferred easily between accounts (e.g. from the generator to the utility) and used as a mechanism to verify that a company has acquired enough renewable energy to fulfill their RPS obligation. Both the buyer and seller must confirm the transaction before it is officially entered into the system (e.g. quantity and whether the REC is bundled or unbundled with energy).

A *Bundled* transaction is one where the renewable certificates and electricity are sold together as a bundled product.

An *Unbundled* transaction is one where the renewable certificates may be sold separately from the associated commodity electricity.

II. Summary of RPS Verification Methodologies by Other States that have a Renewable Portfolio Standard

	Contract Path Accounting	**Electronic RECs Accounting**
RECs bundled with electricity	IA[1], MN[1], NY[1, 2], NJ[2, 3]	
RECs unbundled from electricity	AZ, NV	CT, ME, MA, TX, WI

[1] Iowa, Minnesota and New York do not recognize RECs as such; Iowa and Minnesota look at electricity contracts only. New York has a system whereby renewables are converted to "conversion transactions" which effectively unbundles the renewable certificate momentarily, but requires the utility to rebundle the certificate with electricity purchases from the spot market.

[2] These states are considering an electronic RECs accounting system.

[3] The electronic accounting system being developed in the PJM will be able to record both bundled and unbundled transactions. Right now, New Jersey regulators are considering requiring bundled RECs transactions for their RPS.

Note: New Mexico has indicated that they will be using renewable "credits," though no decision has been made as to whether or not the RECs will be bundled or not with electricity.

Arizona: Arizona employs a flexible certificate-based accounting system, similar to Wisconsin (see details of WI system in attached Appendix B), but compliance is tracked via a contract path system.

Connecticut: Connecticut uses a certificate-based electronic accounting system operated by NEPOOL. For details, see the Appendix B, "Comparison of Existing RPS Tracking Systems Employing Renewable Certificates."

Iowa: Iowa RPS is a capacity-based based standard and eligible generation must be located in Iowa. Utility contracts and generator information are filed with Iowa Utilities Board and the RPS is verified via a contract path accounting.

Maine: Maine uses a certificate-based electronic accounting system operated by NEPOOL. For details, see the Appendix B, "Comparison of Existing RPS Tracking Systems Employing Renewable Certificates."

Massachusetts: Massachusetts uses a certificate-based electronic accounting system operated by NEPOOL. For details, see the Appendix B, "Comparison of Existing RPS Tracking Systems Employing Renewable Certificates."

Minnesota: Minnesota utility contracts and generator information are filed with Public Utilities Board and the RPS is verified via a contract path accounting.

Nevada: Nevada PUC has mandated the use of renewable energy "credits" to track compliance with the RPS. It uses a contract-path system to verify compliance. For details, see the Appendix B, "Comparison of Existing RPS Tracking Systems Employing Renewable Certificates."

New Jersey: New Jersey is working closely with PJM and other regional stakeholders and regulators to develop an electronic certificate-based accounting system. For details, see the Appendix B, "Comparison of Existing RPS Tracking Systems Employing Renewable Certificates."

New Mexico: The New Mexico RPS rule specifies that a flexible "credit" based system shall be used in implementation of the state RPS. The rule allows for credit trading, credit banking, and provides credit multipliers for specific resources to allow utilities flexibility in meeting the standard. Renewable energy credits maintain value for up to four years after date of issuance, and may be used to meet the standard at the utility's

discretion. To promote portfolio diversity and to encourage the development of solar power, each kilowatt-hour of electricity generated by solar technology will count as three kilowatt-hours toward compliance with the renewable portfolio standard. Each kilowatt-hour generated from biomass, geothermal, landfill gas and fuel cell sources will count as two kilowatt-hours towards compliance with this rule. The New Mexico PRC has not developed a credit issuing or tracking system yet.

New York: New York currently uses a contract path methodology to verify green power marketing claims. It is considering an electronic certificate accounting system for verifying compliance with the State RPS and improving compatibility and trading between NY and NEPOOL GIS, PJM GATS and Ontario. A decision on whether or not New York will institute a certificate based tracking system will occur during or after the RPS proceedings (currently underway).

Texas: Texas uses a certificate-based electronic accounting system. For details, see the Appendix B, "Comparison of Existing RPS Tracking Systems Employing Renewable Certificates."

Wisconsin: Wisconsin uses a limited certificate-based electronic accounting system. For details, see the Appendix B, "Comparison of Existing RPS Tracking Systems Employing Renewable Certificates."

III. References for Further Information on RPS Tracking Systems

Information on certificate tracking systems in the US and abroad and on the US 'American Association of Issuing Bodies' initiative:
Hamrin, Jan and Meredith Wingate, " Developing a Framework for Tradable Renewable Certificates, Version 2.4." August 2002.
http://www.resource-solutions.org/TRCAAIB.htm

Web Links to Existing Electronic Tracking and Verification System Initiatives:
Texas RECs Site:
http://www.texasrenewables.com/Index.htm
Note: The reports link offers a peak at the number of MW covered, the number of generator participants, load served in total, etc.

New England GIS Site:
http://www.nepoolgis.com/
Note: The info under "Account Holder Information" is useful.

Wisconsin Site:
https://www.wirrc.com/rrc/index.html

Australia Office of Renewable Energy Regulator, REC registry:
http://www.rec-registry.com/public/home.main

European Renewable Energy Certificate System (RECS):
http://www.recs.org/

American Association of Issuing Bodies:
http://www.resource-solutions.org/TRCAAIB.htm

Examples of Contract Path Accounting Protocols:
Center for Resource Solutions, Green-e Program Verification Audit Protocols:
http://www.green-e.org/ipp/vprocess.html

California Energy Commission, "SB 1305 Annual Report Forms." Available at:
http://www.energy.ca.gov/sb1305/documents/index.html

Appendix B: Backup Materials Phase 2 RPS Workshop May 13, 2003
Comparison of Existing RPS Tracking Systems Employing Renewable Energy Certificates

	Texas Renewable Energy Credit (REC) Program	NEPOOL Generation Information System (GIS)	WI Renewable Resource Credit (RRC)	Nevada	PJM GATS (Design of System Still in Development Phase)	European RECS and Country Summary	Australia Office of Renewable Energy Regulator (ORER) Registry
Type of Tracking Methodology	Certificate tracking with automated verification	Certificate tracking with automated verification	Certificate tracking with automated verification	Certificate tracking with contract path verification	Certificate tracking with automated verification	Certificate tracking	Certificate tracking
Type of Generation Tracked	Existing and new renewable generation	All generation in or delivered to NEPOOL dispatch and control area	Renewable generation delivered in excess of state RPS requirement	Existing and new RPS eligible renewable generation	All generation in PJM Control Area	Existing and new renewable generation	Existing and new renewable generation
System Overview	- RECs are issued based on settlement data & deposited in generator accts. -RECs are bought/sold/traded per privately arranged contracts -RECs transfers occur electronically, initiated by participants -RPS compliance is verified via REC ownership at end of compliance period - RECs are retired after they are used to meet RPS compliance	- Certificates are issued based on settlement data & deposited in generator accts. -Certificates are bought/sold/traded per privately arranged contracts -Certificate transfers occur electronically, initiated by participants -RPS and GPS compliance is verified via certificate ownership at end of compliance period - At end of compliance period, all unsold certificates are assigned the "residual mix" and are retired; all certificates in LSE accts used to calculate disclosure label or verify compliance w/ RPS or GPS	-RRCs are issued for any amount of RE generation delivered in excess of an LSEs RPS obligation -RRCs are bought/sold/traded per private contracts - RRC transfers occur electronically, initiated by participants -At end of compliance period, all RRCs used to meet RPS are retired.	-Generators register with PUCN -Generators/utilities submit quarterly forms indicating amount of RE generated and purchased -PUCN verifies information submitted through utility contracts and billing statements -Credits are issued for eligible RE delivered, multipliers applied if applicable -Credits may be traded -At end of compliance period, all credits used to satisfy RPS are retired	- Certificates are issued based on settlement data & deposited in generator accts -Certificates are bought/sold/traded per private contracts -Certificate transfers initiated by participants -RPS compliance is verified via certificate ownership at end of compliance period -Program administrator will identify percentages for "spot market mix" to be used on env. Disclosure labels, system will issue disclosure labels for utilities and other participants	-RECS is an extra-governmental network of individual country certificate tracking systems. -There are presently 6 individual country certificate-based tracking systems in place (AU, DE, NL, UK, IT, BE) - These are networked together via RECS, although some country rules do not allow trading between countries.	-Generators calculate certificate entitlement and create electronic certificates via web-based registry operated by ORER -Any change in ownership of certificates is recorded in ORER registry -Certificates are retired/expired at request of owner
Location/Domain	Texas/ERCOT Control Area	NEPOOL Control Area- 6 New England States	Wisconsin	Nevada	PJM and PJM West with probable expansion as PJM expands to Midwest	Each country that has system generally controls RECs issued to generators in their country. Anyone may participate in RECS network.	Australia
Primary Function of System	Verify utility and ESP compliance with State RPS. Secondary function to verify green power claims)	Develop and issue environmental disclosure labels; Verify RPS and GPS compliance where applicable	Track and verify utility compliance with State RPS; facilitate trading of RRCs among electric providers	Verify compliance with State RPS.	Develop and issue environmental disclosure labels; Verify RPS compliance where applicable; provide verification function for market participants dealing in RE certificates.	Verify RE generation for in-country greenhouse gas requirements, in-country RE obligations, and voluntary green markets.	Verify compliance with Federal RPS

	Texas Renewable Energy Credit (REC) Program	NEPOOL Generation Information System (GIS)	WI Renewable Resource Credit (RRC)	Nevada	PJM GATS (Design of System Still in Development Phase)	European RECS and Country Summary	Australia Office of Renewable Energy Regulator (ORER) Registry
System Administrator	ERCOT with some shared responsibilities with PUCT	APX with some shared responsibilities by NE regulators	Clean Power Markets	PUCN	PJM, possibly with some shared responsibilities by regulators	Usually governmental entity in each country	ORER
Source of Data	Electronic transfer of settlement quality meter data	Financial settlements data from ISO's Market Settlement System	Combination of electronic transfer of settlement quality meter data; manual entry of meter data; and self-reported	Self-reported by generators and utilities with verification through contracts and spot checks	Financial settlement data from system operator; eGRID	Electronic transfer of meter data;	Self-reported
Participation in System	Mandatory for companies that must meet RPS; voluntary for other market participants	Mandatory for all generators and LSEs; voluntary for other market participants	RPS compliance mandatory for all WI electric providers; RRC trading participation voluntary	Voluntary	Mandatory for all generators and LSEs; voluntary for other market participants	Varies- in general, all countries have mandatory participation at some level, except for the Netherlands	Mandatory for all companies with a renewable obligation; voluntary for other market participants
Imports/Exports	Generally not applicable	Unit-specific imports or exports must be physically delivered to/from NEPOOL system. System mix imports/exports assigned system or "residual" average.	Imports of renewable energy allowed from renewable generators that have a wholesale contract with a WI electric provider	Generators must be interconnected with T&D system of utility. At present time, standards for "proof of interconnection" have not been developed	Undecided how, but intent is to provide for this function seamlessly with other regions	About 1/2 of countries allow international trade of RE certificates	Not applicable
Verification of Generator Attribute Information	Generators register and become "certified" by the PUCT	Generator information verified by state regulators	Generators register and become "certified" by Wisconsin PSC, including out-of-state generators referenced above	Verified by PUCN through contracts and PUC filings	Undecided	In country system operator	ORER oversees the accreditation, verification and spot auditing of generators and information recorded in registry
Small scale systems capability	Yes	Yes	Yes	Yes	Intended	Varies	Yes
Maximum lifespan of certificates	Approx 3 years	1 quarter	Current rules have no expiration date for RRCs	Approximately 5 years	Undecided	Varies. Certificate lifespan ranges from 2 years to unlimited amount of time.	Current rules have no expiration date for certificates
Other Features	Banking and borrowing capability for RPS	GIS organized in quarterly trading periods. System automates line losses, pumped storage, green tag transactions, etc.	"Bulletin board" provided to facilitate trading of RRCs	Credits are first issued according to financial settlement statements, however, starting in 2004, there will be a reconciliation where additional credits will be issued for the difference between gross generation and energy delivered that occurred in 2003.			-Stiff penalties for fraudulent creation of certificates; -Interfaces with a privately operated market-trading platform known as Green Electricity Market (GEM). Participants in GEM can download transaction information into ORER database