

California Renewable Electricity Standard

Public Workshop

March 18, 2010

9:00 A.M. to Noon

Workshop Schedule

✓ Welcome and Introductions

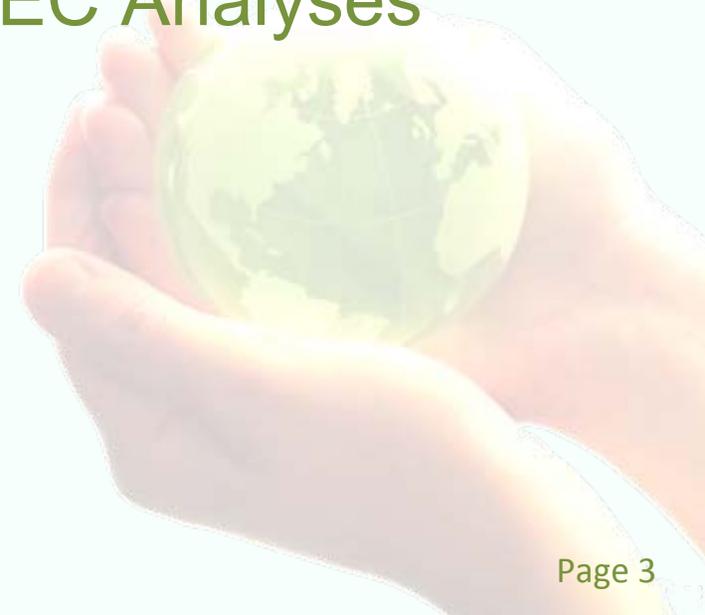
➤ **Status and Overview**

- Measurement Metric (GHG Conversion)
- Compliance Obligations
- POU Resources
- REC Options
- Banking and Trading of RECS
- Small Party Partial Exemption
- Reporting and Enforcement
- Next Steps



Status of Effort and Related Analyses

- Today's Workshop
- Upcoming Workshops
 - April 5th
 - May 4th
 - June 16th
- Environmental, Economic, and REC Analyses
- Revised Draft of Regulation



Overview of Preliminary Draft Regulation

- Maintain Consistency with RPS
- MWh Metric
- Multi-year Compliance Periods
- REC Options
- Banking and Trading of RECs
- POU Resources
- Small Utility Partial Exemption
- Periodic Review



Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- **Measurement Metric (GHG Conversion)**
 - Compliance Obligations
 - POU Resources
 - REC Options
 - Banking and Trading of RECS
 - Small Party Partial Exemption
 - Reporting and Enforcement
 - Next Steps



Measurement Metric

- Based on MWh of procured RECs relative to retail sales consistent with RPS
- ARB to perform annual greenhouse gas emission reduction calculations
- Overview of staff's measurement metric analysis



GHG Metric Analysis

- Determine GHG benefits for resources and technologies eligible for RPS
- Evaluate if MWh can be used as basis of compliance with RES



Methodology for Review

- Determine the “net facility” GHG emissions from each resource
- GHG emissions from operations support and maintenance were included
- Incremental power displaced from grid



Results of Evaluation

- GHG benefits are similar for most resources
 - 830-1,200 lb CO₂e per MWh
- GHG for landfill / digester gas includes differences between in-state and out-of-state projects
- GHG benefits for MSW conversion depends upon waste separation



Conclusions

- MWh is suitable surrogate for GHG emissions
 - Compliance in draft regulation based on MWh
- GHG reductions for draft regulation based on applying GHG benefit factors to MWh renewable generation
- ARB to calculate GHG emission reductions on annual basis and post to website



Next Steps

- Determine GHG emissions associated with incremental power generation displaced by renewable generation
 - Based on CAISO 33 percent study
- Finalize potential GHG emission rate for each renewable resource and technology
- Use GHG emission rate values to determine potential GHG reductions for regulation



Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- ✓ Measurement Metric (GHG Conversion)
- **Compliance Obligations**
 - POU Resources
 - REC Options
 - Banking and Trading of RECS
 - Small Party Partial Exemption
 - Reporting and Enforcement
 - Next Steps



Key Provisions

- Multi-year compliance intervals for regulated parties:
 - 20% for 2012 through **2014**
 - 24% for 2015 through **2017**
 - 28% for 2018 through **2019**
 - 33% by **2020** and **annually** thereafter
- Compliance measured at end of interval
- REC procurement and retail sales tracked and reported annually



Example Calculation

- Retail End-Use Deliveries

2012: 500,000 MWh

2013: 550,000 MWh

2014: 560,000 MWh

Total=1,610,000 MWh

- REC Obligation for Compliance Period

20%

- RECs Needed to Demonstrate Compliance for Period

$1,610,000 \text{ MWh} * 20\% = 322,000 \text{ RECs}$



Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- ✓ Measurement Metric (GHG Conversion)
- ✓ Compliance Obligations
- **POU Resources**
 - REC Options
 - Banking and Trading of RECS
 - Small Party Partial Exemption
 - Reporting and Enforcement
 - Next Steps



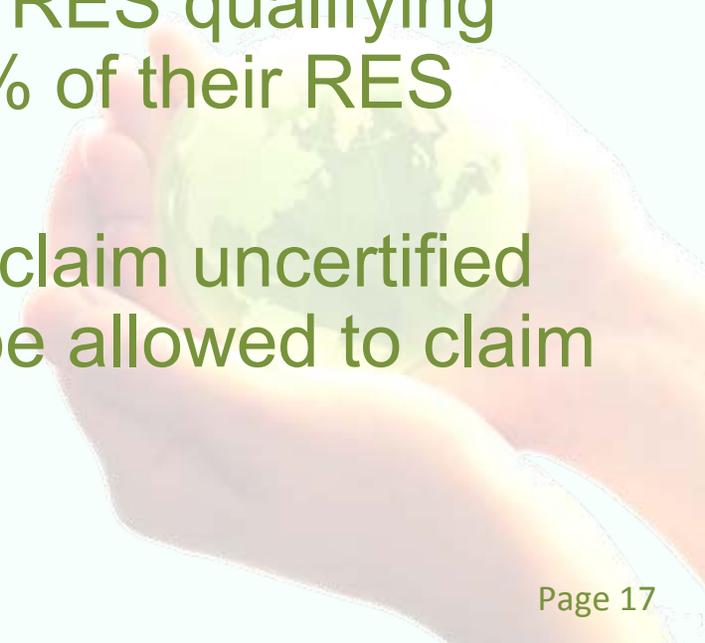
Key Provisions

- Continue limited use of “RPS qualified” resources:
 - Resource procured prior to 9/15/09, and approved for RPS use
 - Eligible up to 20% of regulated party’s retail sales
 - Resource eligibility expires with procurement contract
 - Immediate replacement of expired contract with certified renewable resource



Discussion of Concept

- Should there be limits on the kinds of “renewable” resources that may be claimed?
- Two utilities have ownership rather than contractual investments; should these investments also be phased out? If so, what approach is recommended?
- Should POUs be allowed to use “RES qualifying” resources to meet more than 20% of their RES obligations?
- Should POUs that elected not to claim uncertified resources for the RPS program be allowed to claim them under this provision?



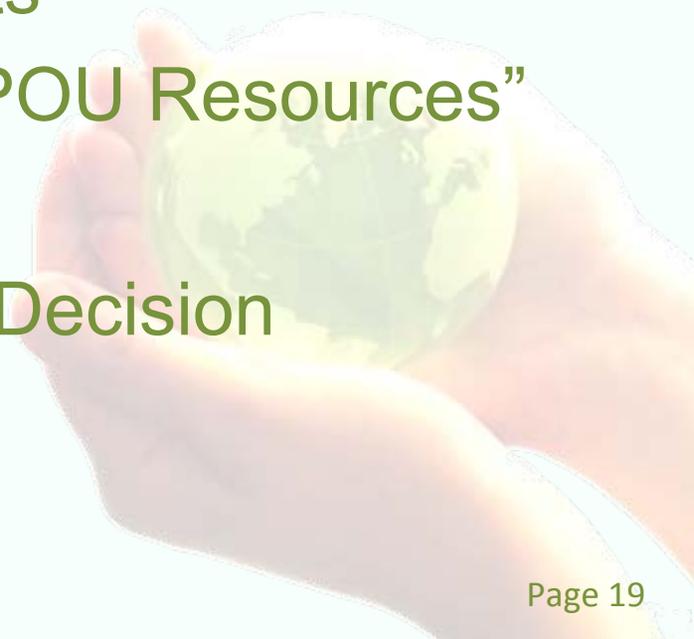
Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- ✓ Measurement Metric (GHG Conversion)
- ✓ Compliance Obligations
- ✓ POU Resources
- **REC Options**
 - Banking and Trading of RECS
 - Small Party Partial Exemption
 - Reporting and Enforcement
 - Next Steps



Key Provisions

- Staff evaluating two options for REC use:
- *Option 1*
 - Unlimited use of “unbundled” RECs without electricity delivery requirement
 - “Bundled” REC acquisitions to comply with RPS electricity delivery requirements
 - Eligibility for “RES Qualifying POU Resources”
- *Option 2*
 - “Tradable” RECs per CPUC’s Decision



Renewable Energy Credit (REC) Trading

Authorized by CPUC for California's 20% Renewables Portfolio Standard



Implementing one of the most ambitious renewable energy standards in the country

Sara Kamins
March 18, 2010
California Public Utilities Commission



CPUC has authorized tradable RECs

CPUC authorized the use of tradable renewable energy credits for 20% RPS compliance in D.10-03-021

- Overview of Decision
 - Allows all retail sellers to buy RECs unbundled from underlying energy and to trade RECs with any market participants
 - Defines what is a bundled and REC-only transaction
 - Sets forth rules for integrating REC-only contracts into RPS compliance framework
 - Adopts contract review standards, including cost cap
 - Limits the percentage of RECs the large utilities can use towards annual RPS targets



What is a TREC transaction?

Decision distinguishes between bundled and TRECs contracts for contract review, applying TREC rules, etc

- A REC-only transaction is for:
 - 1) RECs only (i.e. no underlying energy), or
 - 2) RECs and energy from RPS-eligible generators for which:
 - a) the first point of interconnection with the WECC is not a California balancing authority, and
 - b) the transaction does not make use of dynamic transfer arrangements in a California balancing authority area.
- *Note: Energy Division is required to hold a workshop to determine if transactions using firm transmission should be considered bundled*



Eligibility of TRECs

CEC has jurisdiction over eligibility and delivery rules for bundled and REC-only transactions

- TRECs must be associated with a generator that is certified as RPS-eligible by the CEC
- TRECs must be tracked in WREGIS
- TRECs can be used for compliance if generated after January 1, 2008
- RECs can be unbundled from approved bundled contracts subject to restrictions in PU Code 399.16(a)(5) and (6)



TRECs compliance rules

Compliance rules differ for TRECs because REC-only transactions convey different value and product to ratepayers

- Usage cap: PG&E, SCE, and SDG&E may meet no more than 25% of their annual procurement target with TRECs for compliance years 2010 and 2011
 - Cap sunsets at end of 2011. Energy Division will make recommendation to Commission within 16 months about whether cap should sunset, continue, be modified, etc.
- Cost cap: Utilities may pay no more than \$50/TREC through December 31, 2011
- Flexible compliance: TRECs will be treated the same as RECs from bundled contracts with limited exceptions



Contact information

- Sara Kamins
- Senior Policy Analyst, CPUC Energy Division
- Email: smk@cpuc.ca.gov
- Phone: 415-703-1388

- CPUC TRECs webpage:
<http://www.cpuc.ca.gov/PUC/energy/Renewables/hot/070824recworkshop.htm>



REC Analysis

- Staff performing an extensive review of both REC options
- Reviewing existing reports and related data
- Staff conducting analyses in conjunction with consultants and the energy agencies to evaluate key parameters



Key Points of Analysis for Both Proposals

- Limited vs. unlimited RECs
- Delivered vs. undelivered energy
- GHG and criteria pollutant benefits/impacts
- Load balancing and grid efficiency
- Transmission requirements



Studies Under Evaluation and In-Process:

- Renewable Energy Transmission Initiative (RETI):
 - Transmission Impacts
 - Competitive Renewable Energy Zones
- National Renewable Energy Laboratory (NREL):
 - Availability of out-of-state RECs
- In-House POU and IOU Analyses:
 - Overall renewable energy forecast
 - RES Qualified Renewable Resources
 - Contract viability



Studies Under Evaluation and In-Process

(cont.):

- New E3 model work to examine 33% RES scenario with out-of-state RECs for year 2020
- New criteria pollutant module being integrated into the E3 Model to examine 20% and 33% scenarios
- Working closely with the energy agencies to thoroughly evaluate all possible aspects



Next Steps

- Continue evaluating REC and energy delivery requirements
- Results of E3 model runs due next month



Discussion of Concept

- What are the potential benefits and limitations of the two options?
- What development or investment impacts would these two options have on existing or planned in-state renewable resource development and/or transmission development?
- Should there be limits on the amount of unbundled and undelivered out-of-state RECs that may be used?
- What are the benefits of electricity delivery requirements?



Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- ✓ Measurement Metric (GHG Conversion)
- ✓ Compliance Obligations
- ✓ POU Resources
- ✓ REC Options
- **Banking and Trading of RECS**
 - Small Party Partial Exemption
 - Reporting and Enforcement
 - Next Steps



Key Provisions

- RECs may be banked for subsequent compliance obligation or traded to other parties
- Trading limited to (selling) parties in compliance with REC retirement obligations
- Per CPUC's decision, staff proposing REC trading for up to three years
- RECs from "RES Qualifying POU Resources" are ineligible for trading



Discussion of Concept

- How long should we allow RECs to be traded?
- Should the life of RECs be limited; as proposed the life would be unlimited?
- Should REC trading be limited to regulated parties?
- How can we ensure that REC certificates are tracked from cradle to grave?



Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- ✓ Measurement Metric (GHG Conversion)
- ✓ Compliance Obligations
- ✓ POU Resources
- ✓ REC Options
- ✓ Banking and Trading of RECS
- **Small Party Partial Exemption**
 - Reporting and Enforcement
 - Next Steps



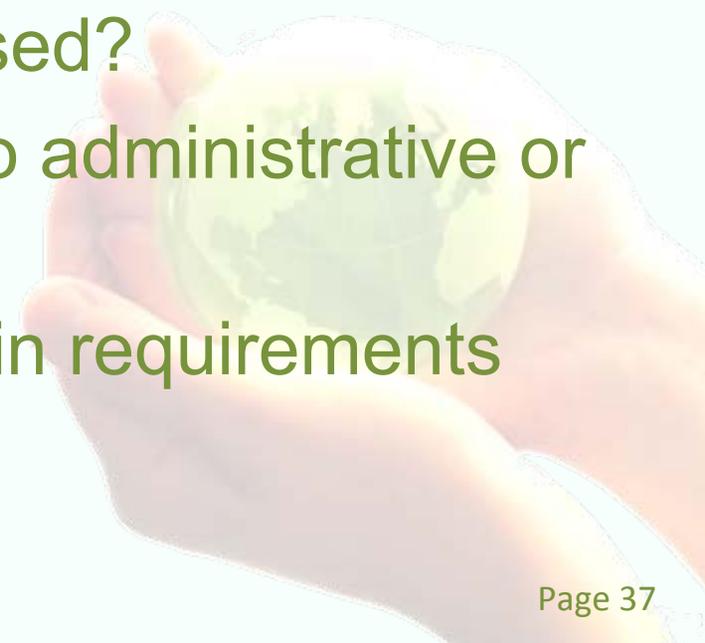
Key Provisions

- Preliminary Draft Regulation proposes a 200,000 MWh threshold level
- Exemption determination conducted annually based on sales to retail end-use customers
- Phased-in compliance for exceeding threshold (renewable procurement only until 33% achieved)



Discussion of Concept

- Factors staff analyzing include significance of load served, administrative burden of compliance, and cost impacts to utilities and ratepayers. What other approaches should we consider to establish the threshold?
- Should the exemption threshold be tied to a specific year or allowed to float as proposed?
- Would a floating threshold lead to administrative or enforcement difficulties?
- Are the partial exemption phase-in requirements feasible?



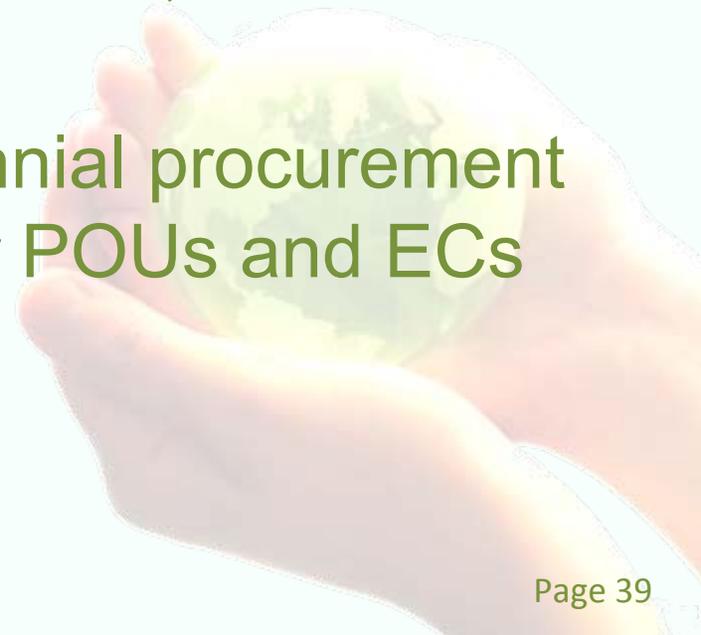
Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- ✓ Measurement Metric (GHG Conversion)
- ✓ Compliance Obligations
- ✓ POU Resources
- ✓ REC Options
- ✓ Banking and Trading of RECS
- ✓ Small Party Partial Exemption
- **Reporting and Enforcement**
- Next Steps



Reporting and Verification

- Use existing RPS verification and reporting process where possible
- CEC to assume monitoring and verification role for POUs and electrical cooperatives (ECs)
- Annual progress reports and procurement plans submitted to CPUC and ARB for IOUs, ESPs and CCAs
- Annual progress reports and biennial procurement plans filed with CEC and ARB for POUs and ECs



Enforcement

- ARB responsible for enforcement with CPUC and CEC consultation
- Violations based on multi-year compliance intervals until 2020 and then annually thereafter.
- Penalties for violations assessed on kWh basis



Workshop Schedule

- ✓ Welcome and Introductions
- ✓ Status and Overview
- ✓ Measurement Metric (GHG Conversion)
- ✓ Compliance Obligations
- ✓ POU Resources
- ✓ REC Options
- ✓ Banking and Trading of RECS
- ✓ Small Party Partial Exemption
- ✓ Reporting and Enforcement
- **Next Steps**

