

Commonwealth Energy Biogas/PV Mini-Grid Renewable Resources Program

Making Renewables Part of an Affordable and Diverse Electric System in California

Contract No. 500-00-036

Renewable Energy Credits Workshop

**Project No. 3.1 Co-digestion of Dairy Manure/Food Processing
Wastes and Biosolids/Food Processing Wastes to Energy**

Task 3.1.6.A Final Deliverable

Prepared For:
California Energy Commission
Public Interest Energy Research Renewable Program

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February 2006

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Introduction

As part of the ongoing efforts of the Commerce Energy Team to make renewable energy more affordable under its ongoing California Energy Commission Public Interest Energy Research Program, a workshop on Renewable Energy Credits (RECs) was held in October 2004. This work was conducted as part of Project 3.1 – Co-Digestion of Dairy Manure/Food Processing Wastes and Biosolids/Food Processing Wastes. The results have been used in subsequent efforts under Task 3.1.6, Conduct Economic and Environmental Assessment. This report documents the results of that workshop.

Early in the work on Project 3.1, it became clear that environmental benefits were an important consideration in the development of any Dairy Waste to Energy Project. That is because in addition to the economic benefits associated with collecting and digesting manure and then using the biogas produced for some economic purpose, there are benefits associated with the improved manure management of such projects. Other tasks including 3.1.6.0 through 3.1.6.6, 3.1.6.B and 3.1.6.C address such benefits and are addressed in other reports. This report summarizes the topics addressed at a workshop focusing on the Renewable Energy Credits that are associated with such projects.

The Renewable Energy Credit Workshop was held in October 2004 at the offices of Inland Empire Utilities Agency in Chino California. It was attended by individuals representing a variety of perspectives and included individuals who attended in person and by phone. This report includes this introduction, the agenda for that meeting, a list of discussion topics used at the workshop and the meeting summary and serves to document the completion of that task.

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Agenda

RENEWABLE ENERGY CREDITS WORKSHOP AGENDA

**Sponsored by
California Energy Commission, Public Interest Energy Research
Inland Empire Utilities Agency
October 27, 2004**

9:30 a.m. Registration and Continental Breakfast

10:00 a.m. Opening Comments and Introductions

- **Robert Wilkinson, Workshop Facilitator, U. C. Santa Barbara**

Welcome to Inland Empire Utilities Agency

- **Martha Davis, Executive Manager for Policy, IEUA**

10:30 a.m. IEUA "Cow Power" Renewable Energy Project

- **Robert Spurgin, Consultant, IEUA**

11:00 a.m. Renewable Energy Credits - Government Perspectives

- **Tim Tutt, California Energy Commission**
- **Dan Adler, California Public Utilities Commission**
- **Mike McCormick, California Climate Action Registry**

12:15 p.m. Lunch

12:45 p.m. Renewable Energy Credits - Certifier Perspectives

- **Alden Hathaway, Environmental Resources Trust**
- **Daniel Lieberman, Center for Resource Solutions**

1:30 p.m. Discussion:

- **What attributes should be included in a Renewable Energy Credit (REC)?**
- **How can double counting of REC's be avoided?**
- **What are the implications of the Cap and Trade/State Implementation Programs for REC trading?**

3:15 p.m. Conclusions and Wrap-up

4:00 p.m. Adjourn

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Discussion Topics

Renewable Energy Credit Workshop Sponsored by the California Energy Commission PIER Program October 27, 2004: Expanded Discussion Points

3.1 What is a Renewable Energy Credit (REC) and What Does it Consist of?

- a. What are the environmental attributes associated with an aggregated REC?
- b. Is it possible to disaggregate a renewable energy credit (REC)?
- c. What are the issues surrounding the disaggregation (unbundling) of REC?
 - i. What benefits exist in a disaggregated REC??
 - ii. What happens to emission reduction credits, or other environmental benefits, in a disaggregated tag?
- d. How to disaggregate a REC?
 - i. What environmental benefits constitute an aggregated REC?
 - ii. What about environmental benefits not associated with the renewable energy development of a project.

3.2 How Can Double Counting of REC's be Avoided?

- e. Accuracy
- f. Completeness
- g. Transparency
- h. Consistency
- i. Conservatism
- j. Regulatory Authority
- k. Boundaries and Limits
- l. Key terms
 - i. Baseline
 - ii. Additionality
 - iii. Leakage and Secondary effects
- m. Crossover with other regulatory programs
- n. Verification and Certification
- o. Reduction vs. Credit

3.3 What are the implications of Cap and Trade / State Implementation Programs on RECs?

- p. Suppliers
 - i. Barriers
 - ii. What market exists
 - iii. Transaction costs
- q. Buyers and Traders
 - i. Consistent supply and market liquidity
 - ii. Verifiable
 - iii. Clear regulatory signals and pathways for qualifying purchases

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Meeting Summary

California Energy Commission / PIER Program REC Workshop October 27, 2004: Meeting Summary

4.1 Executive Summary:

On October 27, a workshop was convened by the California Energy Commission to address the issue of Renewable Energy Credits (“RECs”) also in California known as green tags. This meeting was in connection with the Commonwealth Energy PIER project, task 3.1.6, maximizing environmental benefits from the manure to energy digester project in the Chino Basin. The purpose of the workshop included the following areas:

- Review the differing interpretations and definitions of RECs
- Explore the issue of environmental benefits as they relate to REC’s
- Evaluate the ability to use REC’s to comply with California’s renewable portfolio standard as well as other requirements

The agenda remained somewhat fluid inasmuch as each participant was allowed to identify what they wanted to get out of the meeting.

The workshop clarified some issues and identified more to be addressed in the future.

Major clarifications included:

- Environmental benefits not directly related to the actual development of renewable energy are not required to be included for a REC to qualify in California.
- A REC sold without any environmental benefits attached would not qualify in California.
- There are clear distinctions in defining renewable energy credits by certification agencies which center on either including or excluding of environmental benefits.
- Cap and Trade issues have impacted what is included in a REC, and the certification processes take this into account.

All parties agreed that the concern over air quality both nationally and in California is leading to greater regulation and that trend will continue. As a result, the voluntary trading market for

emissions will be impacted and consequently different in five years than it is today. Five years from now the REC trading market, in order to be viable, will need to address emissions reduction trading as well as renewable energy development. In order to provide incentives to emitters a trading mechanism to reduce specific pollutants would be beneficial. Any legislation should address this growing trend. All parties were in agreement on this. Therefore, the REC program must be able to address these areas:

- Provide for a voluntary trading program for both local criteria pollutants (Ammonia, PM2.5 is an example) and GHG emissions.
- Continue to provide incentives for the on-going development of renewable energy programs, and emission reductions.
- Insure that no REC or emission reduction is counted twice.
- Certification programs must be transferable so as to be accepted in other areas to enhance trading opportunities.

It was suggested that a future meeting be held to build on what was identified in this workshop and to include additional participants.

4.2 Meeting Notes:

Opening Comments and Introductions

Robert Wilkinson, Workshop Facilitator, U. C. Santa Barbara

Bob Wilkinson, Ph.D. Professor of Environmental Science at UC Santa Barbara and a member of the PIER scientific review panel acted as the facilitator of the meeting. He began the workshop with a welcome, self-introductions, and asked participants what they wanted to get out of the meeting. A summary of what attendees said is shown below:

Tim Tutt: California Energy Commission. He indicated an interest in RECs and renewable power.

Martha Davis: Inland Empire Utilities Agency (IEUA). She said she was looking to gain guidance as to how best approach the issue of maximizing value of projects. This includes implications of distributed generation and where that is headed, how environmental benefits can reduce impact on air quality.

John Shears: CEERT. Identified same interests noted by Martha.

Julia Lester: Environ International. She stated that she wants to learn a lot more about types of credits. She noted that due to her AQMD background she brings to discussion barriers that inhibit benefits of projects and how they might be smoothed out.

Mike McCormick: California Climate Action Registry (CCAR). Become informed of the current status of trading. CCAR emphasis is on Greenhouse Gas (GHG) reductions and the nexus with REC trading is becoming more prominent.

Dan Lieberman – Center for Resource Solutions (CRS). Certification issues prominent.

Bill Kitto – CH2M HILL. Continue work outlined in the PIER program.

Fred Soroushian – CH2M HILL. He indicated that he shared Martha's interests.

Alden Hathaway: Environmental Resources Trust (ERT). Certification body for the IEUA REC sold to Commonwealth. Interested in discussion regarding RECs and what they include.

Bob Spurgin: Consultant to IEUA's renewable energy project. He is tasked to identify the multiple benefits from the project and seek to maximize their value. He is looking to learn from the input gained by all the participants present.

Wiley Barbour - ERT. As author of PIER project identifying baseline emissions from selected dairies and reductions at digester, was interested in how this topic applied to this project and elsewhere.

Christina Keller: ERT staff.

Greg San Martin: Pacific Gas and Electric (G&E) Climate Protection Program Mgr. Also from PG&E were the – **RPS Case Manager and Evelyn Lee, an attorney** active in development of WREGIS. PG&E staff had a Collective desire is to learn more about REC market, use of RECs for green pricing and/or RPS issues.

Dan Adler: California Public Utility Commission (CPUC), RPS program implementation. Interested how RECs work with subsidy programs, lead to new infrastructure. He is interested in seeing that the regulations meet the requirements directed by California legislation.

Edgar Mercado: US Environmental Protection Agency (EPA) Office of Air, Office of Atmospheric Programs, Green Power Partnership Program, Energy Star, works with air quality agencies and their interaction with efficiency in renewable energy. He is currently working with states to develop State Implementation Plan (SIP) guidance.

Bob Wilkinson: UCSB and workshop facilitator. Bob identified that all parties have biases and assumptions. Further he indicated all attendees must be strongly committed to move forward (ground rule). Market tools out there are useful but they function in frameworks. Integrity of the process is critical. Climate issues are very serious and require attention. There is huge promise with what's going on in the area of pollution prevention programs. In order to yield results we must have a shared understanding of the issues to be discussed. He indicated: The topic question is how to account for both economic and environmental benefits.

Welcome to Inland Empire Utilities Agency Martha Davis, Executive Manager for Policy, IEUA

Bob introduced Martha Davis, Executive Manager for Strategic Planning at IEUA. Martha welcomed everyone to the IEUA headquarters, and told how the Board and the General Manager are committed to the advancement of public policy issues that benefit all parties. Discussed the Platinum LEED buildings as an example, and wished everyone an enjoyable day ahead.

The meeting then featured presentations by individuals.

**IEUA “Cow Power” Renewable Energy Project
Robert Spurgin, Consultant, IEUA**

Bob Spurgin reviewed IEUA’s Cow Power project. He explained that the environmental benefit comes from reduced emissions at the dairies, which would remain the same even without the development of renewable energy at the digester. Bob discussed IEUA’s role in the process and their commitment to further public policy in the areas of environmental benefits and renewable energy.

Renewable Energy Credits – Government Perspectives

Tim Tutt, California Energy Commission

Tim Tutt discussed definitions. He presented information on the impact of Green pricing programs, RPS requirements, retail markets allowing choice, tracking systems. Asked if RPS compliance can come from out of state generators? Under California RPS law a generator needs to be connected with WECC grid.

Tim reviewed key REC concepts: Unbundling and disaggregating. There is a difference. He explained that unbundling is the separation of credit from underlying electricity. Disaggregating means attributes can be sold separately. PUC decision is to have RECs ‘bundled.’ There is also a concern of environmental justice. For example, a power plant is old and polluting in a poor neighborhood but complies with requirements by transacting in Montana for credits. Tim reviewed requirement that “All environmental attributes associated with electricity production are to be included in the REC.” He also discussed if the environmental benefit will change as a result of electricity generation options.

Tim then discussed tracking and indicated that it is currently not a problem. He indicated that entities can self report. A GenReport is available through the CEC. CEC sends software to generators and generator self-reports renewable energy and can print own certificates. It is clearly an honor system. There are safeguards in place (audits, comparison with generation numbers), but it’s not perfect. Tim indicated that the Energy Commission wants Western Renewable Energy Generation Information System (WREGIS) system to be the common tracking place in California and the West.

Unbundling: Tim raised the question can we track and verify and avoid double counting sufficiently? This poses challenges for which the solution is do-able but it’s different than having a contract with electricity going from generator to consumer. There remains the potential for people doing more than they should, meaning claiming or trading more. Need to track and verify to avoid double counting.

Tim also shared the concern that when you have an unbundled REC it’s difficult to identify what market price referent would apply. The REC market is typically a short term market. Referent is a specifically referred term.

As to ownership, there is a public goods charge contribution involved. Who owns the REC's? He posed the question is it the purchaser of energy, homeowner who has solar on their house, rate payer, or the State that owns the REC? With Distributed solar there are issues of net metering benefits. How ownership plays out impacts these.

FERC decision: Existing QF contracts had no mention of attributes or RECs included. As a result, benefits didn't automatically go with the RECs so it's a matter of state law. Implicit in that decision is the ability to unbundled, since utility hadn't purchased the RECs.

Disaggregation: Key issues are with tracking concerns. If different aspects are handled separately and sold in separate markets, it would seem to create potential for double counting. That is potentially a problem. What is the value associated with displacement? (Note: it is hard to quantify displacement value). One option is to consider accepting a system wide approximation and leave it at that. Onsite renewable benefits and impacts (such as the Desert Tortoise, raptor etc.) need to be considered. How do you compare those impacts with environmental benefits? In California the issue of impacts is currently controlled or mitigated through the California Environmental Quality Act (CEQA), but it is difficult to ascribe a value to it.

SB 1478 (Sher – enrolled August 27, and subsequently vetoed by the Governor) codified the RPS by 2010 instead of 2017. The Governor vetoed it because it didn't go far enough. He referred to the 2004 update to CEC Integrated Policy Report. Tim indicated that the REC market should be developed further but difficult to do in law, should be developed in rules to give the CEC authority to develop workable, flexible rules. 1478 had codified things that would be problematic, such as that RECs can only be traded once. Much of the bill needed to be cleaned up but this bill is a good start.

Dan Adler, California Public Utilities Commission

Dan Adler addressed issues from the point of the Public Utilities Commission (PUC). The PUC works closely with CEC on the REC issue. The centerpiece is the “standard contract terms and conditions to govern transactions”. Language sets which terms are “in stone” and which terms are subject to modification. Renewable Energy attributes and green tags are set in stone. It is very clear as to what's included. Criteria pollutants and GHG pollutants are included. Tipping fees and Production Tax Credits are excluded.

PUC is skeptical of merits of REC trading, including environmental justice and development of renewable energy. The PUC was in favor of the approach 1478 was taking. But the PUC will not address this issue on its own. It will not take on the “tradeable” issue in absence of legislative direction authorizing or requiring them to do so.

There were several questions for Dan in his capacity at CPUC.

Q: What about subsidies and ownership? Who gets them and who claims the ownership of the reductions? Response was that DG renewable systems lead to unclear ownership of RECs, but the PUC has no desire to negate good public purpose of sustainable programs. Therefore, the PUC will not address any ownership issues that might arise from DG systems on solar homes for example.

Q: Dialog process, how to engage with the PUC? Response was that right now DG credit is topic of discussion. There have been two rounds of briefings before PUC. That process is over. Public document will be available by end of year.

Q: Does PUC have authority over trading RECs? Dan said the interpretation is yes but others disagree.

Dan Lieberman interjected the policy of CRS. Where emissions are under a Cap and Trade they are excluded from a REC. That was filed with PUC.

Q: In order for IEUA's REC to be valid for sale do all the environmental benefits, including the air reductions coming off the dairies, need to be included? Dan's response was that from the CPUC's standpoint fuel-use benefits can be retained by IEUA. Environmental Benefits associated with the REC must be included to qualify for RPS per CPUC. Thus the specifically calculated emission reductions from the baseline dairy emissions reduced at the digester can be retained. A statement that all environmental benefits associated with the renewable energy development must be included for the REC to be valid.

Mike McCormick, California Climate Action Registry

Mike began with an overview of Registry as related to REC matters: He indicated that CCAR will be involved in buying/selling CO2 credits in the future. To the extent REC matters impact this trading they are interested.

CCAR is a voluntary registry for companies that keep track of their GHG. Companies get credit (recognition) for registering GHG emissions, establishing a baseline, and reducing emissions over time. The CCAR will develop a policy for renewable energy accounting from GHG.

CCAR's REC definition: "Tradable units representing the environmental attributes associated with the energy from renewable resources unbundled from the underlying electricity component." He indicated that it is tied to the energy generation component.

The Registry concern is what happens to a REC if the attributes are separated out? What are the trading and accounting issues when a GHG reduction is aggregated with a REC? He indicated that these are questions that need to be answered.

Q: How does PG&E adjust for their renewable energy purposes and deduct environmental benefits for reporting purposes? Answer from Greg: PG&E reports emissions from their owned facilities. They do not report purchases of renewable resources as emissions to the Registry. Although they believe that all environmental benefits are included in the green power purchase. Example was from a wind farm that sells the power.

Alden Hathaway, Environmental Resources Trust

Alden began his presentation by informing the attendees that the Kyoto Protocol was ratified by Russian DUMA. The result is that Cap and Trade systems for CO₂ will be in force in 55% of the world market.

Alden discussed some issues related to the definition of a REC: The impression in the market is that verification difficult if environmental benefits not included. It is in fact easier if they are not included. ERT defines a REC as the “exclusive claim that renewable energy is generated on the electric grid in specified amount, resource, time and in the name of purchaser.” That definition has been in place since 1996. If emissions are included, proof of direct reduction and ownership must be clear. Otherwise it can’t count as an emission reduction credit.

Alden’s position is that RECs suggest renewable energy attestation, not emission reduction attestation. The reality of emission reduction markets dictate that they be treated separately from RECs.

He indicated that EPA issued a SIP guidance document suggestion states provide emission set asides further demonstrating that this has lead to a separate distinction between emission reduction credits (ERCs) and RECs. He then discussed Cap and Trade Programs noting that if ERCs are included it is difficult to determine where the ERCs reside. The emitter is the one that gets credit for emission reductions. So the wind farm doesn’t own anything as a result.

The ERT process includes attestations and audit procedures: The ERT process requires a renewable energy attestation audit. Not a measurement. REC can be traded in markets (RPS, GPP markets, etc.). This is appropriate because the ERC market requires specific measurement of ERC and not other attributes that can trade in other markets where there are credits. It also applies to carbon dioxide (not managed under Cap and Trade). Carbon markets in US are acting as though they are already under cap and trade - This is because they’re being measured anyway. Buyers increasingly demand direct verifiable reductions, and indirect carbon credits do not receive full market recognition, if any. Therefore, they must be measured in order to be traded.

ERCs from renewable generation (referred to the WRI GHG Protocol) are indirect and highly subject to double counting.

How do you prove that? Either litigation or government set-aside are the only alternatives for small renewable generators. They will be excluded from the market otherwise.

ERT does not require ERCs. ERCs add value to what they’re doing, ERT process allows for substantiation of SIP considerations, utility environmental compliance measures, opens door for expanding renewable energy market.

Greg San Martin from PG&E then indicated that a NJ company operates in such a fashion involving six states that have Cap & Trade systems.

Daniel Lieberman, Center for Resource Solutions

Dan indicated that they have much in common with ERT. Main difference is with Cap and Trade system (NOX and SO2 are the only constituents in cap and trade). Green e has a specific protocol to deal in Cap and Trade and treats that differently than other certifications.

Dan presented a handout on what is Green-e and what the criteria are.

Reviewed REC tracking and how it relates to WREGIS (Western Renewable Energy Generation Information System). The WREGIS system is the future of preventing double counting.

Carbon is not a cap and trade pollutant. CRS is not opposed to disaggregating a REC. If the owner of the REC wants to sell the pollutant reductions, it's fine, except it is just no longer eligible for green-e, but at that point the REC should be retired.

Dan provided a list of definitions of RECs consistent with Green-e.

Cap and Trade pollutants assumed to not be included in REC.

Q: Martha Davis, 20 years out, given the concern for air quality issues and the likely enforcement of air emission reductions, if this program continues as is won't it change the way RECs are defined if all environmental attributes are included? Dan's response was that we do need to address this issue now, and all the participants concurred. Even looking out five years the market will be completely different. Any trading market must provide incentives for the reduction of emissions and enhance trading opportunities both in state and nationally.

Discussion:

Bob Wilkinson then turned the workshop's attention to the expanded discussion points handed out to the participants. They included:

1. Avoid Double Counting
2. Structure the political process to incentivize and resolve some of the issues being heard today.

The following points were raised in this discussion:

Voluntary carbon markets have to meet certain tests. (Landfills have to capture methane so you don't get credit for that). Mandatory steps do not qualify for trading opportunities.

There was much, and spirited discussion on the "CRS REC vs. ERT REC".

The rights to environmental benefits are conveyed by the system to the utility, so even though you're trying to buy a REC with the environmental benefits you may not get it.

Attributes need to be discussed in the context of are avoided emissions coming from a new plant or existing plant where actual benefit accrues. A new plant can be interpreted as taking the old plant with it's pollutants off line so who gets the benefit?

If a REC used to satisfy an RPS contains carbon, the carbon benefit is transferred to the buyer and must be retired.

CO₂ will likely be mandated in a cap and trade system in 5 years. So we should try to align the system so that it conforms to the system that we think will be in place. We have a very good idea what will be mandated, so the system should deal with that. Including the carbon in the REC will add value.

Discussion on Carbon and RECs:

Bob Wilkinson posed the question to the group as to if the carbon in the REC is included or sold separately will we still have the same methodological questions (grid average or actual value)?

Greg: Not necessarily. In Cap and trade says you must offset your emissions beyond the cap. Then there is a likely double counting problem. SIPs across the US have never included a provision for renewable energy or efficiency credits.

Bob noted calculating the carbon per se would be required regardless of which way you go. Markets will likely use a grid average. Is that appropriate or adequate?

Allocating ownership rights under cap and trade systems might be problematic and there needs to be a distinction between reductions and avoided emissions.

There is a risk inherent in buying renewable energy credits when you don't know the amount of environmental reductions, like carbon. Perhaps the Native energy is a good model?

Discussion then occurred about the IEUA REC. It was indicated that displaced emissions from the renewable energy need to be included with the REC. IEUA didn't know what it is or what it's value is, but we choose not to claim it (actually under green e we couldn't claim it).

Bob Wilkinson noted that we have competing methodologies. The value of the process is if the methodology is agreed upon, not necessary to determine exactly the amount or value of the emission reductions (like purchasing a precious metal).

Alden referred to the National Association of Attorney Generals: Can't make unqualified, unsubstantiated claims on unknown environmental emissions. (1999). In this ruling any documentation of environmental emissions must be quantified. That may pose a problem for many RECs that ascribe "all" environmental attributes to a REC.

An example from the Pacific Northwest: Carbon emissions standard. Oregon Climate Trust purchased offsets. It was based on a combination of lots in the portfolio including renewables and energy efficiency programs. Attestations indicate that the seller will not use or sell any of the conveyance that the buyer has purchased. It avoids double counting but not what is included. (Tim Tutt).

RPS definitions in California include all emission attributes. For example a wind farm sells a REC to Edison. Edison uses the REC to qualify for the RPS and sells the emission reduction. Tim Tutt is OK with that.

Discussion followed on this scenario hypothetically.

PG&E never knowingly buys renewable energy without the attributes. Under no circumstances will they. If they did the retaining entity would be free to transact the environmental attributes in the same way. (Greg from PG&E)

Green e won't certify if the environmental attributes of a REC are being contested.

If PG&E were allowed to do a green pricing program would the price for RE's go up to the RPS penalty price and what would be the implications? Dan Liberman from CRS noted that the voluntary market would go away.

Alden Hathaway: RPS are good tools. There is a compliance limit and incentives to go over it. RPS programs and Green Power Pricing can be compatible.

The RPS penalty price is 5 cents per kilowatt. What is the price that insures optimal benefits are accrued?

Some programs may have long term contracts with fixed prices. Green e certifies a number of utilities that have RPS and Green Pricing programs and don't have a conflict.

Greg: (referring to a Ralph Cavanaugh at NRDC) How can we set up a system that's a model for the US that benefits California. How do we do a cap and trade? What can we set up now? Under RPS we automatically retire the REC. We should not do that in advance of federal mandated CO2 programs.

Mike McCormick: The utility needs to supply renewable energy to customers. Fossil fuels will have limits. Incentives should be put in place for the development of renewable energy projects even without emission drivers. But the two will feed off each other. Large scale efficiency program, Cap and Trade system, and building efficiency program all feed off each other.

Dan Liberman, CRS: Green-e REC requirements for emissions (page 10 of handout). Emission reduction credits based upon reductions from point sources. He said they had identified only one case where it was assigned to a REC generator, in Montgomery County, Maryland. Green e assumes credits are never assigned, so green e does not expect that a renewable generator will not get credit for SO2 or NOX.

Dan and Alden - If Cap and Trade attributes are transferred that would not be appropriate.

Bob Wilkinson. - Companies desiring to be climate neutral have done the calculations on how much they're buying in emission reductions through a REC even though the buyer doesn't need to specify the quantity. So they are being quantified even if not being declared.

Mike McCormick: Cap and Trade limits the renewable energy projects. Dan L: Renewable energy is left out of SOx and NOx trade. Greg: PG&E forecast filed with PUC that says they will meet requirements and reduce fossils. Carbon Cap will be on total emissions, emissions will decline, will offset growth in energy development. Mike: Renewable energy is not capped but will be a tool to assist with Cap on carbon.

Dan Liberman – Policy directions. If carbon is capped and traded then renewable energy is given credit. If not given credits they're in the same boat as NOx and SOx. Renewable energy gets no allowance from SOx and NOx. If carbon credits are not granted to renewable facilities then renewable energy will get no claim recognition for carbon and that will be the end of the voluntary market. Mike: Can the market still provide incentives? Driver could be to meet their obligation through renewable energy mandates. Dan Liberman: That may be a good thing for the compliance market, but might kill the voluntary market.

Alden Hathaway– If carbon reductions are going to support cap and trade systems it depends on how it's set up. Utility must be able to rate base it or else they won't be interested. For such programs to work there needs to be a set aside together (as 6 states do now) to give utilities a

value for that reduction. That will create a level playing field. Greg note that rate recovery is the important issue relevant to the utilities for the cost of RECs or renewable energy.

Tim Tutt – Will continue to discuss REC policy and will likely include municipal systems in future. On site impacts are separated from RECs and can be used and sold separately from the market. This includes IEUA’s emission reductions calculations which can be traded. If the language of all the REC definitions could convey who the attributes are assigned to, then that would be helpful for the CEC in their policy development.

It’s clear that if the two processes could conform (Green – e and ERT), it would be very useful.

ERT – Agree and willing. It was indicated that a key point was to agree as to what are the attributes?? That’s a good place to start and that would help merge the two.

Alden suggested discussing how we’re going to identify what the attributes are they need to be included. This would be a good foundation for further discussion.

Martha Davis– RECs taking on a value as renewable energy apart from emissions. What we did at IEUA was find out that the renewable energy was much more valuable than the emission reductions although we didn’t begin that way. Given the direction environmental regulation is taking what should we do looking at 5 years from now.

Bill Kitto indicated that the Commonwealth Energy PIER Program wants to promote this. Large purchasers want to purchase RECs for offsets. If other attributes including transmission and other considerations are included they could have the effect of making RECs less valuable and leaves some value to renewable energy that is left on the table.

Martha Davis – Events are sweeping in the way we’ve created the renewable energy credit tracking system. If Sher’s bill didn’t go through it gives us another opportunity to ask the question and address the issues. ERT / Green-e have similar issues looking 5 years out in dealing with Cap and Trade systems that will likely materialize. We are ahead of most of the country so to what extent can we anticipate the merger of the issues and move accordingly. It is critical that RPS address air quality issues. It is critical that air issues not contribute to the problem and help drive the issue forward.

Greg San Martin: California has lower carbon content for in state power. Whatever standard put in place should credit what California does differently and will benefit the state, to accommodate the differences.

Conclusions and Wrap-up

Bob Wilkinson: Suggested that it would be helpful if each participant provided their concluding thoughts on the workshop and proceeded to ask each attendee for their comments. A summary appears below.

Bill Kitto: Noted that it was a successful meeting and will bring distinct benefits to future projects. He indicated for biogas projects there is a need to keep benefits distinct and provide back to the project. He also noted that there seemed to be a general recognition that GHG moving toward cap and trade.

Julia Lester – Stated that the indirect benefits can be pursued separately. She also said that PM 2.5 will drive this issue soon and that it was important and that nothing that was covered at the workshop would interfere with local agencies development of criteria pollutants and ammonia and the establishment of a local trading system. These would all be good for the development of such projects.

Bob Wilkinson. Some emissions may outpace renewable energy so it may be a moot point.

Greg San Martin stated that participation from ARB would be helpful. He indicated they could get involved in REC issue. Overall he stated that the meeting included many good discussions. He also said a focus on efficiency and renewable programs will be needed to offset growth in fossil fuel and gas use. He indicated that going forward tradable RECs and how renewable energy plays into the market will be increasingly important. Renewable energy and efficiency together need to go beyond the growth of fossil fuels so they can lead to a decline in emissions and an overall improvement.

Edgar Mercado- Stated that he felt the workshop included many good discussions. He said it was consistent with where things were headed noting that 5 SIPS didn't include measures such as RPS or green pricing programs, but that they would likely include them in the future . He also said he looks at WREGIS as a system to verify that the measures within the SIPS are taking place. Look at economics, emission analyses done by WRAP folks for regional haze. He said he sees efficiency measures as important and found the conclusion that there no net benefit for SO₂ but a big benefit for CO₂, and a fossil fuel benefit deriving from SO₂ as interesting. He also noted that it was good to take a look at to see how that plays with renewable energy projects. The results are accessible via web site at EPA Region 9. Each state has a web site.

Dan Lieberman. – Will convey info to Jan Hamrin and will get back with subsequent thoughts.

Mike McCormick – He indicated that the discussion was very helpful. He sees the questions as to how GHG reductions can be folded into RECs as important and is working on issues so will they will remain engaged.

John Shears CERRT – His advice was to keep it simple as possible and said he will continue to work on 1478 next year. Discussion will help in the home office to provide an appropriate approach to next iteration on legislation.

Alden Hathaway – Thanked the sponsors for having him be a part of the workshop. The workshop was very helpful for market development. He also stated he believes that a simple market is the best vehicle for opening up market information.

Pat Lilly said in some ways he felt like a sponge because he absorbed so much good information. He indicated it is useful for both the PIER program perspective and longer term self generation program perspective. DG is not a simple thing but discussion will prove useful. How to value renewable and non-renewable distributed generation is an important topic and this workshop provided a lot of useful information in this regard. He also noted that techniques on how to quantify direct and other environmental benefits was important and will be helpful to Commonwealth down the road.

Neil Clifton IEUA's director of energy programs indicated he found the meeting to be very beneficial. In his position he often must justify renewable energy projects with the IEUA board so the information presented at the workshop was helpful in this regards was very important.

Martha Davis – Events are swamping this arena. California has jumped into laying groundwork with CCAR, Green-e. We're all a lot closer and recognize the distinctions in the debate. What we do to go forward and shape market for the next 5 years. Take the points that are emerging that reflect the debate and we must bring different thinking. She pointed out that it's OK to be looking at new information and the key question is how do we set California and other Western states up to achieve goals set before us? On the outside it's been portrayed as a big conflict. In reality there is a lot we agree on and we have a common need to move forward.

4.3 Conclusion:

Bob Wilkinson concluded the meeting noting that he thought it was very productive and that there would undoubtedly more to follow on this important topic.

Meeting was very constructive. All parties believe that we must move now to take the necessary steps to have a trading program put in place that looks ahead 5 years to likely air quality mandates that would impact the current system. It was also the consensus of the participant that future meetings should be held on this topic.