RENEWABLE RESOURCE ADVISORY COUNCIL
Notes from meeting February 17, 2010

Attending from the Council:
Kyle Davis, PacifiCorp
Troy Gagliano, enXco
Margie Gardner, Bonneville Environmental Foundation
Robert Grott, NW Environmental Business Council
Thor Hinckley, PGE
Ann Gravatt attended for Suzanne Leta-Liou, Renewable NW Project
Ed Kennell, Clean Energy Services
Robin Straughan, Oregon Department of Energy
Frank Vignola, University of Oregon
Fred Gordon
Jed Jorgensen
Joe Krause
John Volkman
Kim Crossman
Lizzie Rubado
Pete Catching
Peter West
Sue Meyer Sample
Thad Roth

Attending from the board:
John Reynolds

Attending from Energy Trust:
Debbie Menashe
Doug Boleyn
Elaine Prause
Erin Johnston

Others attending:
Vijay Satyal, Oregon Department of Energy
Tom Elliot, Oregon Department of Energy
Bill Eddie, One Energy
Andy Noel, REC Solar, OSEIA

1. Welcome and introductions
Elaine Prause called the meeting to order at 9:30 a.m. Everyone introduced themselves. Robin Straughan was welcomed to the council as Carel DeWinkel's replacement for Oregon Department of Energy. The January minutes were adopted without change. A proposal to cancel the April meeting was modified instead to be rescheduled given the possibility that there may be action items related to the state legislative session and the solar feed-in tariff. No objections were met to the recommendation to shorten the meeting minutes to key discussions and developments. The agenda was adopted without changes.

2. Revolution Energy Solutions multi-site dairy digester project
Thad Roth, Energy Trust biomass program manager, presented on a multi-site dairy digester project in Portland General Electric and Pacific Power territories. The project would strengthen Energy Trust's biogas program and support the development of the biogas industry statewide and nationally.

Thad walked through a multi-site biogas project that Energy Trust is presently reviewing. Revolution Energy Solutions, LLC (RES) proposes to build 795 kW of generation capacity utilizing methane from anaerobic digestion of dairy manure at four dairies located in PGE and Pacific Power service territory. Projected generation is 6,000 megawatt hours annually.

RES will lease property from the dairy and, while not taking ownership of the manure, has secured the rights to process the manure produced by the facility. Generation will be sold to the serving utility as a Qualifying Facility. Total capital cost is $7.8 million. There may be other co-digestion opportunities, but this project is primarily using a manure waste stream.

This project utilizes a Psychrophilic Anaerobic Digester (which refers to the temperature the digester operates at; this one operates at ambient temperature). Design developed by Agriculture and AgriFood Canada (similar to the USDA). Commercial rights owned by Bio-Terre Systems (BTS) in Canada and RES has a license to deploy this technology in the U.S.

There are three commercially operating digesters in Canada for swine farms and dairy manure has been successfully digested at a research scale SPAD system using manure samples from Oregon dairy. BTS will provide a performance guarantee for the proposed projects (that a certain amount of methane can be extracted from waste stream). The first commercial site for a dairy farm will interconnect with a consumer-owned utility in Oregon and will serve as a successful demonstration of the technology.

RES presently has no operating biogas plants. RES founder, Alan Tank, was CEO of AgCert International, a developer of a greenhouse gas reductions project utilizing anaerobic digestion in South America. RES principal, Brian Barlia, has extensive experience developing low-income housing utilizing tax equity financing.

Testing and monitoring of the operation will be performed daily and RES will be able to make any needed adjustments.

Financial Review: The RES business model is to develop multiple sites (10 projects in the next 24 months). The project under review proposes four sites at one time (four in PGE and PP territories, and one in a consumer-owned utility). Total capital cost for the four sites is $7.8 million; capital costs at individual sites range from $1.69 to $2.22 million per site.

Operating costs are similar to other manure-only projects proposed in Oregon. Operating costs include verification of emissions reductions and marketing of biosolids. Revenue for the projects includes the electricity sold to PGE and Pacific Power, the renewable energy credits (RECs), carbon credits (voluntary market) and biosolid sales. Also available is a biomass collector's tax credit from Oregon Department of Energy. Since RES does not take ownership of the manure, the farm would benefit from the tax credit (~$5/green ton).

Project proposal: The total above market costs of the four sites combined is $2.564 million. Energy Trust cannot invest more than the above market costs in any project. Energy Trust is seeking to provide a total incentive of $1.4 million (NPV) for the multi-site project. The incentive will be paid as each site is developed as well as over time based on performance.

To compare this project with others in our portfolio Energy Trust looks at the amount of incentive per aMW. From that view, the small projects in this proposal are more expensive.

There was some discussion about what "economies of scale" mean in this project. Specifically, some RAC members disagreed that economies of scale was the correct way to characterize things. Instead, they suggested that the project owners were learning by doing and lower costs as they went. Developing multiple sites also helps attract investors to the project.

There was concern among RAC members that the volume of waste stream could change or that the dairies involved could go bankrupt. Thad noted that the dairies are contractually obligated to keep the same number of animals. He said the dairy industry is not healthy right now and this project is a challenge for that fact. In general, however, anaerobic digestion is a manure management practice with benefits beyond energy generation.

Energy Trust would take title to a share of the green tags associated with the generated energy. The developer will own any carbon offsets created by this project.

There was a concern as to whether the program budget could support this multi-site project, plus standard biogas projects coming in the door throughout 2010. Thad noted that the budget for this project was initially created in 2009, but the project has taken longer to mature than initially expected. Thad noted that this proposal was not developed in response to a solicitation. The RAC noted that it is a great benefit that all four sites are in the Willamette Valley. Dedicated staff can troubleshoot at one site and apply solutions to all four.

The RAC noted that it seems the real advantage of these digesters are the other benefits (e.g. waste stream management). There was a concern that this development model will always have the same ongoing price tag, the cost of the digester. Will Energy Trust want to continue providing the same level of investment as these projects become more common?

Next steps: Presenting to the Board of Directors for approval in April 2010.

Comments: Vijay Satyal suggested greater analysis of risk, in reference to manure production. Kyle Davis mentioned a unique aspect of this project is the ability to produce carbon offsets.

3. Legislative update

Ann Gravatt from Renewable Northwest Project presented on the status of three energy bills in the Oregon Legislature this special session (Feb 1-28).

I. <u>Biomass Bill (HB 3674)</u>
- Passed the House unanimously
- Vetoed by the Governor last year
- Affects Renewable Energy Standard (RES)—would allow older biomass to count toward RES and would restrict utilities' ability to rely on credits until 2025
- Allows municipal solid waste, 10 aMW

II. <u>Solar Feed-In Tariff (HB 3690)</u>
- Out of the House committee
- 25 MW per pilot program
- Legal issues identified during rulemaking, which is why it's in the session
- Moves implementation date to July 1, 2010
- Clarifies how much should be residential or commercial
- Addresses FERC jurisdiction issue

III. <u>Business Energy Tax Credit (HB 3680)</u>
- Passed the House, and the Senate Finance and Revenue Committee will hold a work session Friday, February 19
- Concerns about past implementation and management of Business Energy Tax Credit and pass-through program
- Provides program cap on all pre-certifications
    - i. 2009-2011: $300 million in Business Energy Tax Credit value; currently, $220 million is already pre-certified
    - ii. The tax credit would be reduced to five percent of total cost, up to $3.5 million for wind projects greater than 10 MW in 2010, $2.5 million in 2011 and $1.5 million in 2012
    - iii. Director to implement a prioritization protocol based on expected lifespan, jobs created, strength of the business plan strength

    iv. Applies to all renewable energy generation projects; energy efficiency and manufacturing projects spared from the program cap regulation, which stays at $10 million
- Program expiration: For energy generation and conservation, final certification must be received before July 1, 2012; for manufacturing facilities, preliminary certification must be received before January 1, 2014
- Accountability and discretion given to director: Business Energy Tax Credit facilities in operation for at least five years; more information needs to be provided on jobs created during the development of the project; establishes a three-year expiration period for pre-certifications; and authorizes director to cancel a pre-certification if application is not in compliance with the law, the same application has already received a final certificate or the applicant is unable to demonstrate that the facility would be economically viable without the credit
- Includes two new descriptions of qualifying facilities: adds renewable energy storage as defined by director; and energy efficiency measures for trucks and truck trailers
- The pass-through percentage is being worked out administratively with Oregon Department of Energy

Robert Grott mentioned developments on the Business Energy Tax Credit will also be discussed February 24 at the Energy Forum breakfast.

11:00 Break

4. Lender survey results

Elaine Prause presented on findings from Blue Tree Strategies' lender study. The goal of the study was to analyze and assess how Energy Trust might strategically address financing barriers for small renewable energy projects. Interviews were conducted with lenders and project participants (12 interviewed) to identify lender concerns and points in a project when financing is needed by the participant. A risk mitigation matrix was developed, as well as recommendations for alternatives to current program assistance.

Results of study:

- Lenders expressed is it challenging to underwrite projects
- Project developers said it was challenging to piece together financing
- Market is facing tighter lending criteria:
  - Debt to equity ratio used to be 80/20 and is now about 50/50
  - Lenders want guarantors or performance bonds
  - Collateral is needed beyond project equipment
  - Lenders not confident in technology performance
  - Large banks not interested in small-scale projects
- Community banks were interested in smaller-scale projects but lack the resources and experience
- The multiple complexities and parties in project development create a perceived uncertainty in its completion
- Upfront costs are significant (permitting, studies, interconnection process, equipment orders) and the most at-risk
- Financing, tax credits and incentives only available at project completion (the commitment of Energy Trust funds is still not seen as reliable by the lenders)

Recommendations:

1. Focus on needs of community banks

   a. Offer training on the available funding resources (incentives, tax credits, grants, third-party financing)
   b. Provide third-party review of underwriting criteria on technology and performance issues
   c. Create opportunities for financing professionals to network
2. Explore other products
   a. Timing of the support needed earlier in the process
   b. Lenders welcome Energy Trust's involvement in gap financing

Next steps:
1. Lender outreach plan
   a. One-on-one discussions
   b. Education both ways
   c. Project reviews to meet underwriting needs
   d. Create a forum of interested parties <u>with actionable goal</u>
2. Explore new products and services
   a. Construction financing, performance bonds, loan guarantees
   b. Direct payments earlier in the process
   c. Balance added risks with expected rewards

Questions for new product exploration:
1. What barrier is it addressing?
2. Will it help move the market?
3. Can we afford it?
   a. To be effective, do we have enough funds?
   b. Would it take too much funding away from other products or services?
   c. Are the administrative costs burdensome?
4. Does it need to be used at high volume?
5. Do we have the expertise?
6. How will risk of disbursement prior to project completion be mitigated?

Questions from council:
Robert Grott expressed support for this approach, especially looking at the needs of individual projects. If we can take risk off the table and it would change the dynamic for the project owner in putting the project together.

John Reynolds said an attraction is getting more for our money by spending it in this type of approach and solution versus incentives. He recommended moving forward with a demonstration project to see how it works and the benefits/risks realized.

Frank Vignola said there are big costs to doing these studies, and it's the risk that the banks are interested in and the more we can reduce the risk, the greater likelihood of loans being given out.

Kyle Davis said the most critical component is working with the lenders in what their underwriting needs are and matching that to Energy Trust's project selection criteria. Energy Trust could target funding to the weaknesses of the proposal so the lending institution can feel more confident in lending. He recommended focusing on community banks and offering training.

Tom Elliot on behalf of the Oregon Department of Energy's Small Energy Loan Program: The department found similar findings in reference to the lending situation and he suggested more

help from Energy Trust on assisting the project developer formulate a compelling business plan for projects, including how the technology supports that plan.

Next steps: Staff will analyze the risks, rewards and costs, and will provide a recommendation to the Policy Committee either in March or April to be able to provide a recommendation to the RAC in April or May and then present to the board when ready.

The Blue Tree Strategies study is located online at http://energytrust.org/library/reports/RenewableLendingChallenges.pdf.

5. Meeting adjournment
Elaine Prause thanked all RAC members for their participation and adjourned the meeting at 11:34 a.m.