EnergyTrust of Oregon, Inc.

Board Briefing
Protocol for Considering Renewable Energy Demonstration Projects

August 8, 2007

Summary

From time to time, Energy Trust has considered funding projects that demonstrate new renewable energy technology to the Oregon market. To build a pipeline of viable projects able to meet our long-term goals, it may make sense to continue or ramp up such efforts. This document formalizes the criteria we use to ensure that demonstration projects are compatible with our mandate and organizational goals. Staff seeks board comment and review.

Background

Energy Trust's formal policies and program implementation manuals set out the conditions under which our renewable energy programs fund projects. Generally, we fund projects that deliver renewable power for the benefit of PGE or Pacific Power customers over the long term, using commercial technology. An Energy Trust subsidy should allow the project to earn a reasonable, risk-adjusted, project-specific rate of return.

Building a pipeline of financially sound projects to meet Energy Trust's goals in the long term will require us in some cases to invest in demonstration projects. These demonstration projects may not meet all the conditions above. For instance, they may employ technology that is not yet fully commercial. This paper describes two classes of demonstrations that may be eligible for funding, and distinguishes demonstrations that are ineligible.

Senate Bill 838 amended provisions that apply to renewable energy to require public purpose funds to be used to defray the above-market cost of "constructing and operating" renewable energy resources. The principles described below reflect our broader interpretation of this amendment. However, the Oregon Public Utility Commission (OPUC) is also reviewing this language, which could affect these principles.

Guiding principles for all demonstration projects

- ***Must lead to projects.*** Energy Trust will only entertain demonstration projects that increase the likelihood that additional projects will be constructed and operated within the timescale (by 2025) and geography (the Oregon service territories of Pacific Power and PGE) contemplated by the legislature. We will not undertake basic science, research or development.

- ***Must have dissemination plan.*** Demonstration proposals must include a plan of what is going to be demonstrated to whom, and how. That is, there must be clear idea of how the knowledge gained will be used to build projects that help create a market for future projects.
- ***Incentives based on standard analysis.*** We will calculate incentives based on Energy Trust's approved above-market cost methodology.
- ***Must deliver benefits to Energy Trust stakeholders.*** Demonstration projects must be located in Oregon. They must deliver a) electric power to PGE or Pacific Power, b) green tags that benefit PGE or Pacific Power ratepayers, or c) both power and tags. Alternatively, there must be a clear likelihood that a successful demonstration will facilitate the construction of projects that deliver power to PGE or Pacific Power.

Demonstrations of pre-commercial technology or approaches

Energy Trust's renewable energy programs typically limit project funding to commercial projects. We define "commercial" in terms of operating history for the technology or approach in question; easy availability of components from stable business entities; the use of standard performance warranties; access to service, maintenance and replacement parts; and the provision by vendors of complete documentation.

We will consider funding projects using pre-commercial technology or approaches, including the use of pre-commercial components in an otherwise commercial project, under these conditions:

- ***Realistic conditions:*** We will fund demonstrations of pre-commercial technology in user facilities under normal operating conditions (i.e., beta tests). We will not fund demonstrations in laboratory or other controlled conditions (i.e., "alpha" tests).
- ***Reasonable duration:*** The demonstration must be designed to deliver power for at least 5 years. We will prioritize projects designed to deliver power over a longer term, ideally 15 – 20 years.
- ***Stable operator:*** The project must be owned by a stable business entity, using technology offered by a stable business entity.
- ***Market significance:*** We will prioritize demonstrations of technology that could uniquely fill a clear market niche (e.g., systems of a size not otherwise available in the market, or able to use an underutilized fuel), or compete with existing systems so as to improve quality and drive down prices.

In most cases, these projects will pose higher risk than projects using commercial technology. Reflecting these risks, project owners may require a higher-than-usual rate of return. While Energy Trust may accommodate the need for higher returns, we will require program participants (or their project partners) that stand to gain financially from the development of a new technology to share some of that risk. We also acknowledge that demonstrations of pre-commercial technology pose higher risks for Energy Trust, due to technology failures.

Demonstration of commercial technology or approaches not in common use in Oregon

In some cases, we will fund demonstrations of commercial technology not widely available in Oregon or not commonly used by specific market segment. These demonstrations will differ from standard projects chiefly in their higher costs associated with publicity, tours and related activities to inform the market. The overall evaluation criteria along with the specific criteria for pre-commercial technologies for duration, operator and market significance would be used to evaluate the value of the additional cost for demonstrations of commercial technology.

Renewable Advisory Council Review

Members of the Renewable Advisory Council (RAC) thought these criteria were appropriate and sufficiently flexible for the present. They suggested these be reviewed in one year, or when enough experience has been gained applying them. The suggestion that we be open to new technology in components of systems was incorporated into this revision. One member suggested we be active in seeking demonstration projects. Staff will consider this as part of the budget proposals in the Fall for 2008 – 2009.

Next Steps

With board input, staff will finalize these criteria and apply them in evaluating demonstration projects across all renewable energy programs. Budgets for demonstration projects will be considered through the standard budget approval process for the Energy Trust.