EnergyTrust of Oregon, Inc.

Open Solicitation
Dry Creek Landfill

March 16, 2005

Purpose

Oregon Environmental Industries (OEI) intends to install a 2.49-megawatt landfill gas-to-energy project at Dry Creek Landfill. They have applied to the Energy Trust Open Solicitation program for financial support corresponding to the project's above-market costs. This briefing paper documents the staff's review of the proposal. As part of our review, we seek input from the Renewable Energy Advisory Council (RAC).

Recommendation

Staff supports inclusion of this project into the Open Solicitation program, and recommends an award of up to $460,000 paid over several years, contingent on energy production. This recommendation is based on several assumptions, which may change as the project solidifies its financing plan. Our recommendation is contingent on the project meeting appropriate technical standards, and on inclusion in the contract of a provision to revise the going-forward funding arrangement should the project become eligible as a PURPA qualifying facility for a more favorable power-purchase rate.

Background

Dry Creek Landfill is a municipal solid waste landfill located 5 miles east of Medford, Oregon, in PacifiCorp service territory. The landfill is affiliated with OEI via ownership. The site was permitted in 1997 for 50 million tons of waste, and as of the end of 2004 had a remaining capacity of 48 million tons. It will eventually fill 250 acres. Classified as an arid site, Dry Creek has a liner and leak detection system. The landfill currently collects and flares its biogas.

To date, landfill gas-to-energy has been demonstrated at approximately 100 sites in the U.S. However, the slow decomposition rate of municipal solid waste has generally limited development to moderate and large landfills. Because Dry Creek is relatively small, it does not represent a low-cost energy resource.

Relation to Strategic Plan

This project meets Strategic Goal 2, by providing approximately 18,649,602 kilowatt-hours (2.240 average megawatts) of electricity annually from an eligible biomass resource.

Technical Analysis

This project will employ three Caterpillar G3516 830-kilowatt engines with a projected run rate of 90%. Our technical team found the project a well-conceived deployment of mature technology using proven approaches to landfill gas collection, treatment and conversion.

Benefits

This project will put to use a wasted biomass resource at the Dry Creek landfill. In the absence of this project, Dry Creek will continue to flare its biogas, resulting in conventional air pollution and greenhouse gas emissions with no useful energy output. The electricity produced by the new system will avoid approximately 13,055 standard tons of CO_2 emissions per year over the first 20 years of operation. To sequester this much carbon would require planting approximately 5180 acres of forest.

This project will help boost the visibility of landfill gas-to-energy projects of this size in Oregon. Its success will be a positive step in moving the market forward and in preparing the ground for the Energy Trust's Biopower program, scheduled for launch this year.

Cost Analysis

The total installed cost of the system is $3,914,191, or $1571 per kilowatt. The table below summarizes our estimate of above-market costs, based on a system life of 20 years.

Equity	$1,957,096
Depreciation and amortization	1,322,055
NPV of operating expense, (interest, tax, O&M and other costs)	4,329,032
NPV energy output	(5,752,637)
NPV of green tag sale	(165,526)
Tax value of projected losses to parent	(23,677)
NPV of state Business Energy Tax Credit pass-through	(998,119)
NPV of net federal Production Tax Credit	(414,533)
Net present value of above-market cost	***$253,690***

Notes:

1. This analysis assumes a standard discount rate of 12%.
2. The Dry Creek financing plan is not yet final. Our analysis assumes 50% debt for 12 years at 6%, comparable to the terms of the State Energy Loan Program.
3. The energy value assumes that PacifiCorp purchases the project's electric output at avoided-cost rates, starting at 4.085 cents/kWh and escalating to 5.265 cents/kWh in 2020, the latest year for which PacifiCorp has published a rate.
4. Analysis assumes sale of four years worth of tags at 4 cents/kWh.
5. PTC value assumes 25% reduction in PTC value due to BETC "haircut"

As the analysis above indicates, our current assessment of the project indicates above-market costs with a net present value of approximately $254,000. (The calculation assumes that dry Creek sells four years worth of green tags at 4 cents/kWh.) To produce that net present value through a seven-year stream of payments linked to the project's power production, Energy Trust would have to commit funds with a nominal value of about $460,000. This number could change if our financing assumptions prove inaccurate.

Committee and Public Review

With the help of an outside consultant, staff began analyzing the project in January 2005 on an expedited basis, in response to the City's hope for project completion in June 2005. By Board policy, a project of this size must seek approval on the Board's regular agenda. The Board next meets April 6, 2005.