# Board Decision
# Green Lane Energy Biogas Plant Project

November 9, 2011

## Summary

Authorize funding of up to $2 million paid over four years to offset the above-market cost of a 1.6 megawatt (MW) biogas plant fueled by methane from anaerobic digestion of agriculture and food processing waste, constructed, owned, and operated by Green Lane Energy, Inc. (GLE).

## Energy Trust Goals

- The GLE project supports Goal 2 of the 2010-2014 Strategic Plan: to accelerate the rate at which renewable energy resources are acquired, helping to achieve Oregon's 2025 goal of meeting at least eight percent of retail electrical load.
- This project is of strategic interest to the Biopower Program because it represents a way to integrate energy production into existing waste management systems and divert organic materials from landfills.
- At 1.6 MW, the GLE project would increase in the Biomass program portfolio capacity by 23%. Currently, Energy Trust has 4.9 MW of Biomass projects in operation with 1.84 MW preparing for construction.

## Background

- Green Lane Energy, Inc. (GLE), an Oregon based company, proposes to build, own, and operate a merchant biogas plant in Lane County near Junction City.
- The project will generate energy from methane that is anaerobicly digested from agriculture and food processing waste. The methane will power a 1.6 MW engine that will generate 11,900 MWh annually. The project will be a Qualifying Facility, and its power will be sold to PGE.
- The project will also produce thermal energy, horticultural media, and liquid fertilizer.
- The plant is strategically located to optimize reception of feedstock and the sale of co-products. The plant will be co-located with a composting facility that will purchase the horticultural media, sell thermal energy to an adjacent facility, and liquid fertilizer to an adjacent organic farm.
- The biogas facility will include a feedstock reception facility, a pretreatment tank, two anaerobic digester tanks, a methane storage facility, a generator and gas cleaning facilities, and interconnection infrastructure to sell the electricity as a QF to PGE.
- The project has secured a long-term lease for the site, feedstock agreements for 70% of the forecast energy production, off-take contracts for the fiber and liquid nutrient, and a Letter of Intent for sale of the thermal energy.
- The project development team assembled for this project participated in the design and construction of the Stahlbush Island Farms biogas plant. The process design selected by the project has designed over 40 biogas plants worldwide. The CAT engine generator selected is installed at four sites in Oregon.
- The project is located in Blachly-Lane Electric Coop (BLEC) service territory, which is unable to purchase the electrical output of the project. BLEC supports the project and is completing an interconnection and wheeling agreement with GLE. GLE has secured firm point-to-point transmission access from BPA and is reviewing a draft Power Purchase agreement with PGE.

- In keeping with utility requests for advance notice of projects that wheel power, staff met with utility representatives before the RAC meeting to review the projects and their costs.

- The RAC has reviewed and supports the project.

## Financial Analysis

- Energy Trust determines project incentives based on a project's above-market cost, i.e., the difference between the cost to produce the power from the project over its life and the market value of the equivalent grid power at standard rates.
- The analysis includes tax credits and other benefits available to the project. Above-market costs are calculated as a net present value, which is the sum of the discounted value of the installation costs and the annual operating expenses of the project over its lifetime.

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| **Revenues** | |
| Power Sales | $ 5,944,045 |
| Additional Revenue | $ 3,084,210 |
| State BETC Pass-through | $ 887,663 |
| ITC Grant | $ 1,958,235 |
| ARRA Funding | $ 1,725,000 |
| Total Revenue | $ 13,599,153 |
| **Costs** | |
| Capitalized Cost | $ 8,556,619 |
| Operations Expense | $ 4,131,415 |
| Maintenance Expense | $ 1,901,990 |
| Other Expense | $ 1,659,048 |
| Taxes | $ 519,875 |
| Total Project Cost | $ 16,768,947 |
| Gross Above Market Cost (Total Revenue - Total Project Cost) | $ (3,169,794) |
| Tax Benefits | $ 1,488,199 |
| Net Above Market Cost | $ (1,681,595) |
| **Above Market Cost After Tax Adjustment** | **$ (2,727,914)** |

- Staff and an independent contractor reviewed the project design and costs and found them to be standard and reasonable for projects of similar size, type and design.
- The total capital cost of project is $8,900,000. This project is finalizing term financing.
- The project's above-market cost is $2,727,914 over 20 years, including installation and operating costs, and assuming the project qualifies for state and federal tax benefits.
- Staff proposes to pay $2,000,000 for this project, which is 73% of the above-market cost. The incentive will be distributed by one of the following methods:

  - By our standard funding model: the first payment would be made on project commissioning; the next three would be paid annually based on project performance. The net present value of this four-year payment is $1,519,000 or 56% of above market costs for the project.
  - Or through our construction loan pilot program. Staff would come back to the board with terms if this option were chosen.

- At a total payment of $2,000,000, the project's energy would cost Energy Trust about $1.47 million per average megawatt (aMW). On a net-present value basis the cost to Energy Trust is $1.12 million/aMW.
- At a $1.47 million/aMW cost, this project proposal falls near the middle of other biomass projects funded by Energy Trust: less than the RES projects ($2.2-2.5 million/aMW) and Rough and Ready ($1.64 million/aMW) and more than Stahlbush Island Farms ($600,000/aMW) and the City of Medford ($960,000/aMW).
- The project is expected to apply for federal tax incentives. It also received an ARRA grant through the Oregon Department of Energy and a reduced BETC.
- The project will also benefit from other revenue streams from fiber sales for compost, liquid effluent, and thermal energy. These revenues were included in evaluating the above-market cost of the project.
- Energy Trust will receive 56% of the Renewable Energy Certificates (environmental attributes of renewable energy) that can be used to meet renewable portfolio standards of PGE produced annually by the project.
- Funds for the project are within the 2010 Biomass program budget.

## Recommendation

Approve $2,000,000 in funding for the Revolution Energy Solutions project, by adopting resolution #603, below.

**RESOLUTION 603**

**APPROVING FUNDS FOR THE GREEN LANE ENERGY BIOGAS PLANT PROJECT**

**WHEREAS:**

1. **Green Lane Energy, Inc. (GLE) proposes to develop a 1.6 megawatt biogas facility fueled by methane from anaerobic digestion of agriculture and food processing waste.**
2. **The proposed plant will be co-located with a composting facility that will purchase horticultural media, sell thermal energy and liquid fertilizer to adjacent facilities and farms.**
3. **The project is of strategic interest to Energy Trust because it would integrate energy production into existing waste management systems and divert organic materials from landfills.**
4. **Staff and an independent contractor reviewed the project design and costs and found them to be standard and reasonable for projects of similar type and design.**
5. **The project would seek QF treatment for sale of energy to PGE.**
6. **Staff proposes a $2 million incentive, representing 56% of the project's above-market costs.**
7. **Energy Trust would take at least 56% of the project's renewable energy certificates, which PGE can use to meet its renewable energy portfolio requirements.**
8. **At the proposed payment, the project's energy would cost Energy Trust about $1.47 million per average megawatt (aMW), which is in the range of other Energy Trust biomass projects.**
9. **The incentive will be distributed either by the standard approach, in which a first payment would be made on commissioning and subsequent payments based on performance; or by a construction loan. Staff would seek board approval before proceeding with a loan option.**
10. **Energy Trust's biomass generation portfolio is currently 4.9 MW, with 1.84 MW preparing for construction. At 1.6 MW, the GLE project would be a significant increase.**

**It is therefore RESOLVED, that the board of directors of Energy Trust of Oregon, Inc. authorizes:**

1. **Payment of up to $2 million into escrow to offset the above-market costs of the GLE generating project;**
2. **Energy Trust will take ownership of at least 56% of the renewable energy certificates produced annually; and**
3. **The executive director to enter into contracts consistent with this resolution.**

Moved by: Seconded by:

Vote: In favor: Abstained:

Opposed: [list name(s) and, if requested, reason for "no" vote]