RAC Project Review Memorandum

Oct. 26, 2011

Project Name:	Green Lane Energy, Inc.
Program Manager:	Thad Roth

Project Proposal

Technology Type:	Biogas
Capacity:	1.6 MW
Annual Generation:	11,900 MWh
Total capital cost:	$8.9 million
Date of Commercial Operation:	October 2012
Utility:	PGE
Power delivery (net-metered, QF):	QF

Project Summary

Green Lane Energy, Inc. (GLE), an Oregon based company, has applied to Energy Trust's Biopower Program for funding of a Biogas project. GLE proposes to build, own, and operate a merchant biogas plant in Lane County near Junction City. The project will utilize methane from anaerobic digestion of agriculture waste and food processing waste to power a 1.6 MW engine generator. The project will generate 11,900 MWh annually and sell power to PGE as a Qualifying Facility.

	Proposed Incentive
Evaluation Criteria	
Project Term:	20 Years
Above Market Cost (NPV):	$2.72 million
Proposed Offer	
Total Incentive:	$2 million
Payment Terms:	Four uniform payments of $500,000 beginning with commercial operation, with the remaining three payments made annually based on energy production.
NPV Incentive	**$1.519million, 56% of above market cost**
REC Allocation:	Minimum of 56% of the RECs for term of contract (20 years)

Project Evaluation Narrative

This project meets the key qualifications for funding from Energy Trust as a custom project: less than 20 mw capacity; delivers power to PGE; and uses eligible organic residues to produce methane utilized in an engine to generate electricity. This project also qualifies for Oregon's RPS.

This project is of strategic interest to Energy Trust because it represents an example of a longer term goal to integrate energy production into existing waste management systems and to create capacity to divert organic materials from landfills. The project represents an additional capacity of 1.6 MW to the existing 1.6 MW Stahlbush Island Farms project. Preliminary analysis suggests that there is adequate feedstock to support 12-14 MW of capacity in this sector.

The project proposes to utilize locally sourced feedstock from agriculture, food processing and the dairy industry to produce electricity, 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, thermal energy from the CHP will be sold to an adjacent facility, and the liquid fertilizer will be sold to an adjacent organic farm.

The plant will utilize process technology from Entec Biogas, gmbH, a European firm with 40 operating digesters worldwide. The project secured the services of the same construction and management team that participated in the development of the Stahlbush Island Farms biogas plant.

A technical review of the project application has been completed and the project assumptions appear reasonable (feedstock assessment, methane production, costs). The project has secured contracts for 70% of the feedstock necessary to meet energy production forecasts. The project has also secured off take agreements for all of the fiber and the liquid digestate produced by the project. The project also has a Letter of Intent from the state Department of Corrections to purchase 60% of the thermal energy available for the project for a psychiatric hospital to be constructed in 2014 .

GLE has secured a lease agreement from the property owner for 20 years with two ten year extensions. The project has also received a land use compatibility acknowledgement and their application for a Solid Waste Treatment Facility permit is presently under a 35 day public review.

The project is located in Blachly-Lane Electric Coop (BLEC) service territory. BLEC has indicated that they are unable to purchase the electrical output of the project due to their power purchase contract with BPA. Since the location of the project is key to its success for receiving feedstock and marketing co-products the project will sell the output to PGE as an off system QF. BLEC is supportive of the project and is completing an interconnection and wheeling agreement. GLE has secured firm point to point transmission access from BPA and is reviewing a draft Power Purchase agreement with PGE.

This is a unique project representing the first unaffiliated (merchant) biogas plant in Oregon. The success of this project will rest on the project owner's ability to manage multiple feedstock supplies, effective digester operation and maximize revenues from multiple co-products.

Above Market Cost Evaluation
Energy Trust's methodology to establish Above Market Cost has been applied to this project. A term of 20 years for project life was selected to match the lease agreements with the landowner. The IRR selected matches other similar privately owned, levered projects using anaerobic digestion.

A total incentive of $2 million is proposed for this project. This incentive may be dispersed in one of two ways, either with a construction loan component, or our more standard approach of incremental payments after commercial operation.

If the incentive is offered under our standard approach the NPV of the incentive is $1.519 million which is 56% of the above market cost. The incentive cost of the project is $1.47 million/aMW. Based on an incentive of $2 million (NPV $1.519 million) the project falls short of the target IRR. The project has opportunities to improve returns through strong management around feedstock acquisition and expanding markets around available co-products.

If a construction loan component is included a maximum of $1.5 million would be dispersed during the construction period and would be recovered through principal forgiveness over a five year period after commercial operation. Principal forgiveness would be accomplished based on meeting energy production targets. During the five year amortization period, GLE would make interest payments to Energy Trust on the outstanding principal. The remaining incentive (difference between $2 million incentive and the construction loan) would be distributed once the construction loan was repaid.

Renewable Energy Certificate (REC) Allocation
Based on an incentive of $1.519 million (NPV) the levelized cost of 56% of the 11,900 RECs associated with this project per year over 20 years is $18.52/REC. We estimate the market value for RECs currently to be $7.94/REC levelized. Because our incentive for this project produces a higher value for the prorated portion of RECs than market, we base our allocation on a percentage of the incentive to total above market cost (56%).

Summary of Risk Assessment
Biogas plants face three basic risks, feedstock supply, commodity risk associated with co-product sales, and operational risk.

- GLE has attempted to manage feedstock supply risks by securing feedstock supply contracts for the majority of their energy requirements. They have also secured MOUs with additional providers to fill the remaining feedstock needs.

- GLE is managing sales of co-products also through contracting. Off take contracts are in place for fiber digestate (horticulture media) and for liquid digestate as well as a Letter of Intent for thermal energy.

- To address methane production GLE has secured a performance guarantee from the process designer based on the specific feedstock to be used and has conducted lab tests to confirm energy content of proposed feedstock.

Above Market Cost Evaluation

Project financial summary (NPV basis)

Size (MW)	1.6
Annual Output (MWh)	11,900
Evaluated Resource Life (years)	20

Revenues

Power Sales	$5,944,045
Additional Revenue	$3,084,210
State BETC passthrough	$887,663
ITC Grant	$1,958,235
ARRA Funding	1,725,000
Other	
NPV 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
NPV Total Project Cost	$16,767,921
Gross Above Market Cost (Total Revenue - Total Project Cost)	($3,168,768)
Tax Benefits	1,488,199
Net Above Market Costs	($1,680,569)
Above Market Cost After Tax Adjustment	($2,726,249)

Next Steps/Schedule

With respect to milestones to complete the project is ready to begin construction once it has financing in place. We are waiting for GLE to make final decisions on construction and term debt financing to determine if GLE will choose to our construction financing option.

Evaluation Reviewed and approved by:
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