

PROGRAM: BIOPOWER

PURPOSE: To facilitate the emergence in Oregon of one or more biopower segments able to deliver low-cost renewable energy to the grid while securing other non-energy benefits for industrial, municipal, commercial and other project sponsors. Contributes to Strategic Plan goals 2, 4.

STRATEGY:

- Perform market analysis and stakeholder outreach
- Focus marketing on outreach and lead generation to targeted segments
- Identify the best projects available at this time, through a competitive request for proposals (RFP), while establishing price points and other market information
- Utilize cost-shared feasibility studies to create market confidence
- Assist selected applicants in developing proposals
- Gain experience with technologies potentially able to assume the bulk-power role currently occupied by wind
- Complete the commitment in the Renewable Resources Strategic Plan, which proposed ongoing programs in solar, wind and biomass energy

2006 OBJECTIVES:

- Perform market analysis as needed to explore additional biopower segments and sub-segments, establishing Oregon-specific information on costs and resource potential
- Perform stakeholder outreach by targeted segment to expand the program’s reach.
- Contract for 3 – 6 projects from the 2005 RFP with the expectation that most of these will be completed in 2006 and the rest in 2007
- Field a follow-on RFP in 2006, committing funding for 2 – 4 new projects to be built by the end of 2007
- Provide service incentives for feasibility studies and other project analyses to overcome knowledge barriers and continue to drive projects towards readiness
- Build knowledge, awareness and contacts in new biomass segments such as forest biomass, dairies, food processing waste and others

TARGETED OUTCOMES:

2006 Proposed Budget

| | |
|------------------|---|
| Energy | 2.30 – 3.10 aMW (20,148 – 27,156 MWh) |
| Generation Range | \$1.57 – 1.17 mil/aMW \$0.013 – 0.010/kWh, levelized |
| Budget | \$3.6 million |

2005 Full-Year Forecast

| | |
|------------|--|
| Energy | 3.59 aMW (31,448 MWh) |
| Generation | \$0.11 mil/aMW \$0.001/kWh, levelized |
| Forecast | \$0.4 million |

2007 PLANNED ACTIVITIES:

- Complete projects selected in the 2005 RFP that have extended construction schedules, plus those projects selected in the 2006 RFP
- If previous RFPs have collected sufficient market and cost information, and if sufficient funds available, offer standard, “first come, first served” incentives for one or more biomass segments. If not, field another RFP.
- If funds and other market conditions allow, field more active market interventions for less-developed biomass segments.

2007 PROJECTION:

| | |
|---------------|-------------|
| \$ M | aMW |
| \$5.5 million | 3.95 – 5.32 |

(see budget details on reverse. *note – detailed draft budget does not include administrative costs which are included above)

RENEWABLE ENERGY 2006 FINAL ACTION PLAN/BUDGET

PROGRAM: OPEN SOLICITATION PROGRAM

PURPOSE Develop a portfolio of market-defining installations, each element of which demonstrates a new application, technology or business model not otherwise covered by Energy Trust programs, provides insight on whether and how to launch new, technology-specific Energy Trust programs, and/or secures a low-cost renewable energy resource. Contributes to Energy Trust strategic goals 2,3 and 5. This program will only be available within the PGE service territory. Funds for Pacific Power will depend on other programs underperforming.

STRATEGY:

- Offer a program to ensure that eligible good ideas do not “fall through the cracks”
- Make funds available for renewable energy projects with economic development characteristics
- Focus on outreach and lead generation
- Make funds available for feasibility studies
- Assist selected applicants in further developing proposals
- Ramp down the program in Pacific Power, reflecting budget priorities and emerging opportunities in biopower and community wind.

2006 OBJECTIVES:

- Complete the 6 approved projects (Albany Hydro, OHSU PV, Stoller Winery PV, Farmers Irrigation Hydro, Oregon Zoo PV and Klamath Falls Irrigation PV)
- Market to defined, specific audiences in the PGE service territory, including selected on-site applications and municipalities
- Update Open Solicitation website with new project summaries
- Develop and disseminate case studies with two detailed project case studies targeted to engineering and municipal decision makers
- Secure 2-5 new projects and 300 kW of commitments and installations
- Develop program marketing brochure

TARGETED OUTCOMES:

2006 Proposed Budget

Energy 0.31-0.35 aMW (2,700 – 3,100 MWh); \$6.4-
 Generation Range 5.6 mil/aMW; \$0.061-.053/kWh, levelized

Budget \$2.0 million

2005 Full-Year Forecast

Energy .001 aMW (10MWh); \$265.9/aMW;
 Generation \$2.54/kWh, levelized

Forecast \$0.3 million

2007 PLANNED ACTIVITIES:

- Complete projects approved in 2006
- Adjust to a smaller budget, which reflects the expanded markets being served by the biopower and wind programs
- Continue the narrower, targeted marketing rolled out in 2006.

2007 PROJECTION:

| | |
|-------|-------------|
| \$ M | aMW |
| \$0.5 | 0.01 - 0.02 |

(see budget details on reverse. *note – detailed draft budget does not include administrative costs which are included above)

RENEWABLE ENERGY 2006 FINAL ACTION PLAN/BUDGET



PROGRAM: UTILITY-SCALE PROGRAMS

PURPOSE: Low-cost, resource acquisition program designed to move the market for large-scale renewable resources to parity using alternative generation sources. Contributes to Energy Trust Strategic goal #2.

STRATEGY:

- Support utility Integrated Resource Plan (IRP) acquisition goals.
- Partner with Portland General Electric and PacifiCorp on request for proposals (RFP) processes, relying on direct competition.
- Foster utility experience by helping position Portland General Electric and PacifiCorp to acquire increasing amounts of renewable resources.
- Support Oregon’s large-scale renewables industry.

2006 OBJECTIVES:

- Implement the Master Funding Agreements with PGE, completing commitments to fund one or more projects to be built in 2006 - 2007.
- As appropriate, finalize a Master Funding Agreement with PacifiCorp to support the timely development of projects.
- If applicable, complete project commitments for PacifiCorp from 2005 or develop alternatives for that portion of the funding.
- Establish green tag reporting in coordination with the western regional generation information systems (WREGIS).
- Work with utilities on any updates to their IRP action plans.
- Initiate a market assessment for geothermal in Oregon.

TARGETED OUTCOMES:

2006 Proposed Budget

| | |
|------------|---|
| Energy | 30-70 aMW (262,800- 613,200 MWh); |
| Generation | \$0.68-0.29 mil/aMW; \$0.005-0.002/kWh, levelized |
| Budget | \$20.4 million |

2005 Full-Year Forecast

| | |
|------------|---------------|
| Energy | |
| Generation | 0 aMW (0 MWh) |
| Forecast | \$0.2 million |

2007 PLANNED ACTIVITIES:

- Complete project commitments from 2006.
- Define a market strategy for supporting geothermal generation for utility systems

2007 PROJECTION:

| | | |
|--|-------|------|
| | \$ M | aMW |
| | \$4.9 | 7-16 |

(see budget details on reverse. *note – detailed draft budget does not include administrative costs which are included above)



PROGRAM: SOLAR ELECTRIC PROGRAM

PURPOSE: Transform the solar electric market for all sectors in Oregon by expanding participation, providing quality standards and ensuring there is a strong qualified installer base for consumers. Contributes to Energy Trust strategic goals 2, 3 and 5.

STRATEGY:

- Build upon the program’s success, and move past the early adopters in the market transformation effort.
- Provide quality standards for consumers to rely on.
- Concentrate outreach efforts to increase participation among PGE customers.
- Expand market opportunities to include homebuilders and commercial architects/engineers.

2006 OBJECTIVES:

- Program design:
 - Leverage increased state and federal tax credits to extend the impact of the program’s budget.
 - Conduct an impact evaluation to analyze the effect on participants’ overall electricity consumption.
 - Conduct follow-up to process evaluation to compare recent participants’ motivations to the earliest adopters.
 - Evaluate with OIT the performance of installed systems to identify better performing systems.
- Marketing:
 - Sponsor statewide solar home tours and leverage other organizations’ efforts to promote awareness of solar energy.
 - Expand direct marketing, with greater emphasis in PGE territory.
 - Participate in cross-program incentives, leveraging customer interactions with energy efficiency programs.
 - Expand support for solar in school, linking with ODOE’s initiatives.
- Builder support:
 - Offer training, incentive assistance and marketing support for solar home developments.
 - Promote solar on homes in 2006 Street of New Beginnings.
 - Sponsor technical training for builders, engineers and architects.
- Solar industry support:
 - Sponsor U of O to monitor Oregon’s solar radiation and analyze technical impacts of system performance.
 - Offer training on quality installations and successful business practices to new entrants and existing trade allies.

TARGETED OUTCOMES:

| 2006 Proposed Budget | | 2005 Full-Year Forecast | |
|----------------------|---|-------------------------|--------------------------------|
| Energy | 0.07-0.10 aMW (639-852 MWh); \$35.7- 26.8 | Energy Savings | 0.04 aMW (366 MWh); \$40.47 |
| Generation Range | mil/aMW; \$0.274-0.206/kWh, levelized | | mil/aMW; \$0.31/kWh, levelized |
| Budget | \$2.6 million | Forecast | \$1.7 million |

2007 PLANNED ACTIVITIES:

- Continue to ramp to long-term, stable program budgets.
- Adjust marketing to respond to changing supply and consumer needs.
- Incorporate results from program and system evaluations.

| 2007 PROJECTION: | \$ M | aMW |
|------------------|-------|-----------|
| | \$2.1 | 0.07-0.08 |

(see budget details on reverse. *note – detailed draft budget does not include administrative costs which are included above)

PROGRAM: WIND CLUSTER PROGRAM

PURPOSE: Expansion of the opportunities for wind from the current market models, fostering market transformation to bring cluster development and small wind to Oregon. Contributes to Strategic Plan goals 2, 3, 5.

STRATEGY:

- Confirm sufficient wind resources through anemometer loans and support for Oregon State University’s wind monitoring lab.
- Develop financial and business models to help rural Oregon communities and landowners become project sponsors.
- Define a standard incentive offer or use successive RFPs to seed market development.
- Build the pipeline of future projects, partnering with USDA on feasibility grants and analyses.
- Break down knowledge barriers by providing consolidated, Oregon-specific information for project sponsors.

2006 OBJECTIVES:

- Launch an ongoing program to install smaller clusters of large turbines (i.e., “Wind Clusters”).
- Target the development of at least one project with 1.5MW of capacity as an example of cluster development.
- Continue the full loan of 10 small-scale anemometers, creating base information for on-site generation.
- Provide tall tower anemometers and data analysis to support feasibility studies for cluster wind projects
- Continue to partner with Oregon Department of Energy (ODOE) to assist landowners in gaining federal co-funding of projects and studies.
- Partner with ODOE, Oregon farm groups and other state agencies to co-promote the program.
- Conduct 1 in-depth case study with financial fact sheet.
- Distribute the Community Wind Guidebook.
- Address transmission and distribution barriers to bring BPA and Co-op wind resources to PGE
- Continue providing the industry with support to address interconnection issues
- Help develop national testing standards for small wind turbines and the formation of a national certification system
- Initiate market analyses of small wind for a possible 2007 effort

TARGETED OUTCOMES:

2006 Proposed Budget

Energy 0.30-1.0 aMW (2,628-8,760 MWh); \$6.9- 2.1
 Generation Range mil/aMW; \$0.057-0.017/kWh, levelized
 Budget \$2.1 million

2005 Full-Year Forecast

Energy 0 aMW (0 MWh)
 Generation
 Forecast \$0.4 million

2007 PLANNED ACTIVITIES:

- Fully operational program for cluster wind development with standard incentive or succession of RFP’s
- Program revisions based on 2006 experience
- Bring projects to fruition that were proposals in 2005 and 2006
- Decision on expanding the program to regularly include small-scale on-site generation

2007 PROJECTION:

\$ M aMW
 \$1.4 0.20-0.67

(see budget details on reverse. *note – detailed draft budget does not include administrative costs which are included above)