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COMMISSION

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An Alliant Energy Company

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December 7, 2001

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Ms. Lynda Dorr
Secretary to the Commission
Public Service Commission of Wisconsin
610 North Whitney Way
PO Box 7854
Madison, WI 53707-7854

HAND DELIVERED BY COURIER

Re: Wisconsin Power and Light Company's Application for Approval of Its Biogas
Renewable Energy Distributed Generation Program

Dear Ms. Dorr:

Enclosed for filing in the above-referenced matter is one original and 20 copies of Wisconsin
Power and Light Company's application for the Commission's approval of its Biogas
Renewable Energy Distributed Generation Program.

Very truly yours,


Ritchie J. Sturgeon
Senior Regulatory Attorney

Enclosures

WISCONSIN POWER and LIGHT COMPANY

**PROPOSAL FOR
BIOGAS RENEWABLE ENERGY DISTRIBUTED
GENERATION PROGRAM**

December 7, 2001



Ritchie J. Sturgeon
Senior Regulatory Attorney for
Wisconsin Power and Light Company

1. Statement of Proposed Plan and WPL's Interest

Pursuant to Section 196.02(1), Stats., and any other legal authority deemed appropriate by the Commission, Wisconsin Power and Light Company respectfully requests the Public Service Commission of Wisconsin to approve its demonstration program for Biogas Renewable Energy Distributed Generation. This program is designed to accelerate the market acceptability of electric generation using biogas as fuel. This biogas is produced by anaerobic digesters for manure on farms, landfills, waste water treatment plants, and some industries.

This proposal includes a tariff valuing biogas produced electricity at 6 cents per kWh two options for implementing projects (WPL owned generation and customer owned generation using a performance contract), and the accounting treatment to support the program.

1.1. Introduction

The current national energy policy debate has been influenced by recent energy supply constraints in various regions of the United States. Demand side reductions often are set in opposition to supply side additions, as if the two strategies were mutually exclusive options. Wisconsin Power and Light Company (WPL) supports a more balanced approach to meeting future energy needs.

WPL believes that the optimal strategy is one that addresses both increasing energy efficiency opportunities for its customers and the development of energy supply resources - both renewable and advanced traditional supply opportunities. The use of distributed energy resources is one of the strategies that WPL believes can improve supply in an environmentally advantageous manner. As applied in this proposal, distributed energy resources refer to modular distributed energy generation, storage, or geographically targeted demand side management.

WPL has a long history of innovative demand-side management programs, starting with its time-of-day rates in the 1970s. WPL has also initiated various new programs to help boost the supply of energy, such as its participation in the Montfort wind turbine program.

This proposal is a continuation of WPL's ongoing efforts to set the pace in energy supply innovation. Specifically, WPL proposes to implement a Biogas Renewable Energy Distributed Generation (BREDG) program.

Biogas Renewable Energy Distributed Generation Program

BREDG is a demonstration project designed to encourage the development of a sustainable fuel supply "stored" in agricultural waste streams. It is derived from the production of biogas from agricultural/food processing wastes and organic municipal landfill wastes. Both agricultural waste (including food processing) and landfills generate significant quantities of methane. Methane gas has a high heat value and is a significant component of natural gas. Landfills (through natural, unaided anaerobic digestion) and agricultural waste (through enhanced waste management) can provide a significant and sustainable source of energy.

Electric and heat energy can be produced by capturing this gas to fuel an engine, boiler or turbine.

WPL views this proposed BREDG program as an important opportunity for the State of Wisconsin and for WPL to support significant progress in the energy supply area. The program proposed by WPL endeavors to:

- Mitigate the electric generation capacity constraint;
- Lessen Wisconsin's reliance on imported electricity;
- Provide new revenue for municipalities, farmers, and industries;
- Provide a demonstration program which may stimulate investment in renewable energy distributed generation by other utilities and private companies (e.g., food processing companies);
- Encourage sustainable economic development in Wisconsin's rural areas;
- Improve the economic well being of farmers in Wisconsin with the potential of providing another revenue stream via the sale of surplus energy and/or reducing farm energy costs by replacing purchased power; and
- Improve the environment by providing a viable alternative to agricultural waste management.

In order to generate and capture the waste gas, a program participant needs an anaerobic digester, a gasifier, or in the case of a landfill, a well field. WPL proposes that the ownership and operation of the digester or well field continue to be the responsibility of the customer as they are in a better position to operate them effectively and optimize the operation for multiple purposes. WPL will provide assistance with the selection, design, and installation of these systems to facilitate projects and remove some of the risks perceived by participants concerning the technology.

Participants will either contract with WPL to provide and maintain the bio-gas fueled electric generation, or they will purchase the generation and operate it themselves. Electricity produced on-site by a bio-gas fueled generator will be connected directly to the distribution grid. As an option, the customer may provide electric wiring to the interconnect switch which will allow the WPL to provide electricity to the farm during local electric distribution outages.

Specifically, the BREDG Program demonstration project will address the following issues:

- Equipment efficiency and viability;
- Operations and maintenance costs and/or problems;
- Economic viability;

- Electric versus waste heat uses;
- Methane production levels with different equipment and operations methods.

WPL will perform the following in order to quantify projects to answer these issues:

- Each project will be set up with its own accounting which will include equipment and installation costs, maintenance costs, and energy purchase costs.
- Electric generation will be monitored and a historical record maintained.
- Each project owned by WPL will have an analysis of heat recovery potential and this analysis will become part of the project record.
- A sample of projects will be chosen for monitoring for methane gas. This will be compared to the electric production and evaluated based on projections prior to project installation.
- A record will be maintained for each project indicating technology employed, customer acceptability over time, maintenance log, and other information, which will impact future applications of the technology. These logs will be reviewed annually to determine which technologies produce the best results and which do not provide long term viability.
- WPL will work with customers to determine operating differences which impact methane production. Different operating techniques will also become part of the project log.

Action requested of PSCW

1. Approve program for BREDG that consist of two options for biogas generators: WPL owned generation and customer owned generation utilizing a performance contract.
2. Approve BREDG tariff authorizing a rate of 6 cents per kWh for electricity generated from biogas. *Note: Throughout this program description, 6 cents per kWh will be the reference price for the value of the electricity. However, the tariff divides this value into an on-peak and off-peak price to encourage on-peak generation. A winter/summer tariff was also considered but deemed unnecessary, as biogas production occurs year round and no benefit is realized by a seasonal rate split.*
3. Approval of accounting treatment.

2. Statement of Proposed Plan and WPL's Interest

2.1. Overview of WPL's Proposed BREDG Program

The proposed WPL BREDG program will target four groups in WPL's service territory. Each group produces methane via anaerobic digestion or gasification:

1. Farms with livestock operations (including dairy cows, cattle, pigs and poultry);
2. Landfill operations;
3. Wastewater treatment plants (WWTP); and
4. Food processing plants (industrial facilities with biogas production facilities to manage organic wastes).

The program will include a mix of these technologies dependant on economic viability and application acceptability. Although other target groups are being studied by WPL, those selected show signs of having the greatest potential for initial success.

2.2. BREDG Program Features

WPL's BREDG Program is designed to create sufficient participant incentives to overcome some of the barriers that have prevented implementation of these technologies. The proposed program will accelerate the development of a specific renewable energy resource, namely biogas, by providing economic incentives to stimulate project developers and customers to implement projects.

The proposed program, designed to make the program user-friendly and therefore likely to succeed, includes two key elements: a determination of the value of distributed generation from biomass and the means to facilitate installation.

The proposed program will establish the relative value of electricity generated and delivered to the grid versus electricity generated from biomass renewable energy distributed generation. This value will help determine a premium price for the electricity, which, in turn, will stimulate the market and accelerate development of biogas as a useful resource. The premium pricing will be sufficient to overcome market barriers such as the additional capital cost; additional operating complexity and the perceived added risk associated with operating unfamiliar technologies for the first time. WPL proposes this rate to be 6 cents per kWh.

The second key element is basic to the design of the program itself - it must not impede the installation of the generation. This program further removes barriers and provides the customer with the confidence that the generation will produce the benefits over the long term.

First Option

WPL will install and maintain utility-owned biogas-fueled engine/turbine generators at the customer's site. WPL will pay the customer a monthly amount for the biogas that will be based on the value of the renewable electricity less generation costs. As indicated, the value of the renewable electricity will be 6 cents per kWh. The electricity generated will be delivered directly to the distribution grid. WPL will also provide customers any recoverable heat energy produced. This recoverable heat will be necessary for proper digester operation and will be provided to the customer at no additional cost. The monthly payment

will be adjusted based upon actual kWh produced to provide the customer an incentive to maintain the quantity and quality of biogas.

Second Option

The second option will be a performance contract for customers who want to own their biogas fueled generators. Under the contract, WPL would provide the funds for purchasing and installing the generation and generation support equipment. The customer would pay back this investment monthly based upon a rate established for the program. WPL would buy the electricity produced and deliver it directly to the grid for the value of biogas-produced electricity - 6 cents per kWh. WPL would monitor the electrical production and provide the customer with a guaranteed cash flow based on energy produced. The customer will have to agree to a design approved by WPL and to an operating plan that will insure consistent production of electricity at rates predicted for the installation. This option removes both the capital barrier and technology risk from the customer.

2.3. Projected Size and Impact of the BREDG Program

WPL believes there is significant potential in its service territory for electric generation employing biogas-related technologies.

Preliminary data indicate there are 121 farms in the WPL service territory that are potential applications for ag biogas generation. A conservative estimate places generation potential at 12 MW. These farms will be the initial targets for the program. WPL will expand the target market to an additional 429 farms in the next size category following a program evaluation. This decision will be based on the economic viability of the smaller operations.

A landfill biogas generation program is projected to contribute another 10.8 MW to the State's generation mix. The average large landfill could generate 1.5 MW per site, and small landfills could generate 360 KW per site. WPL has determined that there are 19 possible landfill sites in its service area, most of which are small. Initially, WPL will target twelve mid-sized landfills with total generation potential estimated at 4.3 MW.

An added benefit of the agricultural part of this program is that generation of electricity from animal waste will provide an additional revenue stream for Wisconsin's livestock industry while reducing odor problems on the farm. After the animal waste is used to produce biogas for electricity generation, it can still be used as fertilizer, livestock bedding or sold as compost.

Although some large landfill operators have already begun participating in biogas generation, WPL's program will target small to mid-sized landfills. The small to mid-sized landfills have not gotten involved in electricity generation due to various technical and financial hurdles.

BREDG will also apply to waste water treatment plants (WWTP). Technically, applications are limited to those WWTP that use anaerobic digestion. These tend to be mid-sized communities. WPL is currently evaluating these applications to develop a standardized technology package to reduce the cost of installation.

In order to accomplish the greatest number of projects, WPL will limit the project size to 800 KW of generating capacity. This cap will spread program dollars over more projects as one or a few projects will not consume all the program incentives in any one year. This is also consistent with economy of scale for some technologies. For example, large landfills can generate as much as 5,000 KW. These projects employ technologies, which have been available for years and for which the economics are already favorable. Therefore, they should not be the focus for BREDDG.

2.4. Program Rationale

Under the proposed BREDDG Program, WPL is using and expanding on the lessons it has learned in over a century of electric generation. WPL also has at least a quarter century experience in offering energy and energy efficiency services to its agricultural customers. With its experience in electricity generation and its solid understanding of its agricultural customers, WPL has been able to carefully evaluate the market potential in the agricultural digester, gasification, and landfill gas generation market.

This BREDDG proposal seeks to stimulate distributed and renewable energy resources by targeting applications like agriculture that present widespread opportunities and for which, suitable small-scale generation technology currently exists, but is under-utilized.

Until recently, many such projects have not been attractive because of economics and the unfamiliarity of most farm operators with this technology. Furthermore, most farmers and landfill operators lacked the knowledge or capital necessary to pursue them. The BREDDG program proposed by WPL effectively addresses each of these barriers. In fact, WPL has observed that there are six key barriers that have kept utility customers from utilizing agricultural digester and landfill gas generation:

1. A lack of knowledge concerning generation and interconnection to the utility.
2. A scarcity of time and resources needed to gain knowledge, implement projects, and operate generation.
3. A shortage of capital to invest in generation.
4. Uncertainty concerning the long-term viability of the generation technology and utility rates (i.e., issues of risk avoidance) exists due to the failure of the anaerobic digester technology in the 1970s.
5. As generation represents a distraction from the primary efforts of farm or landfill operation, the economics do not justify a diversion of time or the taking on of additional tasks.
6. A low buyback rates from the utility company result in a low return on investment.

Finally, an important overall program benefit from WPL's perspective is that the various agricultural and industrial *projects under* this BREDG program will provide experience and identify various issues involved in such a program. These will allow WPL to learn a considerable amount about what it takes to successfully establish and operate a distributed resources generating program like the BREDG.

2.5. Operation of proposed WPL Biogas Renewable Energy Distributed Generation Program

The Program

Simple rebate programs or energy buyback rates alone will not capture all the potential for generation at facilities like dairy farms, landfill sites, waste water treatment plants, and food processing plants. Therefore, WPL's proposed BREDG program has been designed to proactively stimulate the market by removing various barriers to customer participation in biogas generation. This is accomplished by providing a program that systematically addresses customer concerns and provides options and assurances.

The program is designed to stimulate activity by removing customer barriers to installation of digesters and generation. In all projects, the customer is expected to own, operate, and maintain the digester as this equipment is more pertinent to the normal operation and the customer can significantly impact biogas generation through quality operation. The program consists of two implementation options.

WPL owned generation

Since many customers may not want to own the generation equipment, WPL will offer to own, operate, and maintain the generation equipment at the customer's facility. WPL will pay the customer a fee for the amount of biogas produced by agricultural digesters, gasifier, industrial digesters, and landfill gas. This fee will be based on the value of the biogas electric generation of 6 cents per kWh. WPL will factor the cost of ownership and maintenance out of the 6 cents and pay the biogas producer the remaining value.

Cost recovery: The installed cost of the generation equipment will be considered as utility rate base. Program expenses will be charged to an escrow account as indicated above.

Customer owned generation

A customer (or a *project developer* selected by the customer) can participate in the BREDG program if they own the generation equipment which utilizes biogas as a fuel. In order to remove the barriers indicated previously WPL will:

- Purchase electricity generated at 6 cents per kWh.
- Provide a guarantee of performance of the electric generation equipment.
- Finance the generation equipment. The customer will repay this investment monthly out of revenue received from the sale of electricity.

- Evaluate the feasibility of prospective projects with the customer or project developer
- Provide assistance in the selection of generation, gasification boiler, and digesters, design of the system, and interconnection as well as other technical assistance.

Why 6 cents per kWh?

Appendix 6.4 shows examples of three biogas projects. The first example assumes a typical farm with 1,000 cows. Currently, WPL's most likely negotiated rate for these projects would be about 4.5 cents per kWh. At this rate, the example indicates the customer will experience a negative cash flow. Similarly, the example indicates a cash flow over \$4,000 for the 6 cent per kWh rate proposed. Although this still does not represent a significant revenue stream, WPL believes this will motivate projects, as there are other savings associated with bedding and propane for hot water. In addition, the 6 cent per kWh rate has received considerable visibility from other utilities in Wisconsin.

The second example is a medium landfill operation. The economics for this application are somewhat better because less infrastructure is required for the generation. Again, the current 4.5 cent per kWh produces a negative cash flow for projects. The 6 cent per kWh rate provides a significant revenue stream for the landfill operator-typically small governments. Large landfills have been excluded from this proposal since the larger size produces economy of scale and the cash flows are significantly more favorable, even at the 4.5 cent per kWh rate. Tax credits have also not been included since their future is not certain and all landfills do not qualify for them.

A third example is also demonstrated. This is a small waste water treatment plant. This size plant would serve a community the size of Sun Prairie, Wisconsin. As indicated, neither of the buyback rates provides a positive cash flow. WPL is exploring different technologies and methods to reduce the cost of support equipment and installation.

Cost recovery: The electricity purchases will be considered fuel expense and recovered from customers like other fuel expenses. All other program costs to include administrative, program cost, and the cost of capital will be recovered through an escrow account and recovered in future rates similar to the current DSM escrow.

It should be noted that this option is very similar to WPL's highly successful Shared Savings service for energy conservation in which over 2,500 customers have participated since 1990.

2.6. Other Participant's Interests and Issues

At least three other groups are expected to be positively impacted WPL's BREDG program, namely certain businesses and trades, environmental groups, and the State of Wisconsin.

Various types of businesses are expected to benefit if the BREDG program is implemented, based on WPL's experience in past programs. These businesses

include electricians, equipment dealers, electrical supply firms, concrete companies, design engineers, and manufacturers who will be called upon to provide goods and services needed to operate the BREDG program. WPL proposes that electricians and equipment dealers install the generation equipment and provide service after installation, as WPL does not have these capabilities.

The BREDG program is environmentally beneficial in that it generates electricity from renewable resources like animal waste, crop residues, and landfills, which up until now have been viewed as a waste management problem rather than an energy resource. By using such sustainable resources to generate electricity, as opposed to conventional-fueled power plants, there will be less contribution to global warming through not burning fossil fuels. The environment is further enhanced by the reduction of methane, a significant greenhouse gas released from landfills, manure storage lagoons, and piles of food processing residues.

The proposed program has significant benefits for the State of Wisconsin. This program will turn a major agricultural waste disposal problem into a generation asset, thus lessening the adverse economic impacts of imported electricity.

2.7. Coordination with Department of Administration (DOA)

This program does not duplicate present, or currently proposed, programs under the auspices of DOA. WPL will coordinate its efforts on BREDG with the Wisconsin DOA in an effort to maximize the benefits of both initiatives. It is not likely that there will be overlap since most DOA programs are information and training-oriented programs. There is some potential to utilize a DOA training effort for project developers in order to standardize technical delivery and performance. WPL will explore this with DOA if BREDG is approved.

3. Definitions

The key definitions that will be used throughout this suggested plan are as follows:

Administration - WPL will set up the guidelines of the application process for the performance contracts. WPL will also offer educational and informational programs on the BREDG.

Contracts - Performance Contracts for this program are expected to address the following issues:

- Outline of equipment that is to be installed.
- Establishment of the baseline operating conditions.
- Explanation to customer of billing for the performance contract.
- Explanation of claims process in the event that the level of generation does not occur.
- Process of adjustment to compensation outlined if generation and/or operation does not occur according to baseline.

- Contract terms will be for 5 years.
- The proposed contract addresses termination during the contract term by requiring the biogas producer to pay for any non-recoverable installation costs adjusted for depreciation.

Customers - Qualified participants are entities in the WPL service territory which generate methane from gasification of ag biomass, anaerobic digestion, or which own or operate landfills which generate methane and purchase electricity on a retail basis from WPL, and are currently on a general service rate.

Project Developer - The person or entity that provides the technology and process expertise, is responsible for permits required for installation of the generation equipment, and arranges or provides on-going servicing if required. This can be any entity such as a professional organization, group, or individual who provides electric or gas energy engineering, equipment design, equipment installation, equipment maintenance, or other energy services. Potential project developers include contractors; energy services companies (ESCO's), including affiliates, architecture and engineering (A&E) firms, manufacturers and distributors of generation equipment, and regulated utilities. WPL proposes that customers do not participate as a project developer on their own project.

BREDG Escrow Funds - The Performance-guarantee BREDG option will be funded through new monies and placed in the conservation-type escrow until WPL's next rate case is concluded; and a final accounting treatment for this program is adopted.

Educational/Informational Initiatives - To publicize the BREDG program, WPL will offer a mix of educational, informational and safety topics on renewable energy from anaerobic digestion and landfill gas recovery through its Internet site as well as through newsletters, direct mail, and other media to farmers and other likely prospects.

4. Analysis Supporting Requested Funds Increase

4.1. Accounting Treatment

Performance guarantee:

WPL proposes to start collecting these program costs with its next base rate case contingent on PSCW approval of the BREDG and authorization in future rate cases. Between the approval and start of this new program and the inclusion of its costs in the next base rate case, WPL requests authority to include all expenditures in a segregated conservation escrow account. Such amounts would then become a part of any over or under collection of escrow monies included in the next base rate case. Continued use of an escrow accounting process could then be determined in WPL's next base rate case. All program related cost will be charged to this escrow.

WPL Ownership:

WPL proposes to include all costs of ownership and operation in base rates. The cost of the biogas fuel will be recovered through the fuel adjustment clause provisions. The cost of the equipment and installation will be rate based. Other operating expenses will be normal utility O&M expenses.

Customer Owned Generation:

Cost to purchase energy (kWh) considered a purchase power cost and recovered through the fuel cost adjustment.

Performance contract:

The project costs financed by WPL will be treated as normal investment and accounted for using WPL's weighted cost of capital. WPL will net present value this cost to the date the customer begins payments and charge this "buydown" to the escrow. In addition, any defaults or payments due to the performance guaranty will be charged to the escrow as incurred.

WPL requests approval to commence its proposed Biogas Renewable Energy Distributed Generation Plan January 1, 2002.

Escrow Accounting

Appendix 6.5 provides a general summary discussion of escrow accounting. Escrow accounting is important to the program in order to provide flexibility during application. This method will automatically adjust the annual budget to expenditures. This is important because it will track success (or non-success) of the program. Coupled with the annual evaluation, this will limit expenditures if the program does not achieve goals and allow for more rapid growth if the program is highly successful.

4.2. Budget

The budgets and goals for BREDG will be based upon the annual implementation of 20 (estimated) facilities per year requiring a contract from WPL or seeking the 6 cents per kWh purchase price.

Appendix 6.3 contains the annual budget for this program. As indicated, the annual budget for the program is estimated at \$442,994 in the first year. The majority of the budget is for incentives. BREDG credits for the 6 cent per kWh rate are slightly over \$773,000 annually in year three. This is about \$193,000 more than WPL's avoided cost for the generation. It is entirely possible that this additional cost can be partially or wholly offset by WPL's green energy program Second Nature.

4.3. Program evaluation

WPL will perform an evaluation every year after the program is approved, to include:

- Program costs;
- Generation installed by type;
- Cost to generate by type;
- Fit of program generation with market price of green energy; and
- The need for continued incentives or program adjustments.

WPL will produce an annual report summarizing the findings of the evaluation to the PSCW staff. The report will include a recommendation concerning whether to continue the program and reasons for the recommendation.

4.4. Program modification

Based upon annual evaluation, WL will modify the BREDG program and tariffs to respond to changes in the market, technology, or business environment. Also, WPL may extend the term and/or increase the MW capacity goal depending on whether the program is successful. WPL will seek PCSW approval of any significant changes.

4.5. Term

BREDG is a pilot program that will be offered for 3 years or until 10 MW of generating capacity is installed. BREDG may be continued after the initial term upon review and approval by the PSCW.

This term and scope of this program are deemed necessary due to:

- A long project sales and implementation cycle - 18 months is not unusual. Therefore, the term must allow enough time to complete enough projects for evaluation and demonstration. It is anticipated that several digester technologies will be evaluated.
- The necessity to provide a geographical distribution of demonstration sites within the WPL service territory to enable potential biogas producers to view successful applications of the technology.
- The program needs to complete enough projects to accomplish a critical mass. This critical mass is necessary to reduce the cost of installation and establish skill sets for projects within the service territory.

NOTE: Some customers have installed digesters anticipating this program and similarly, WPL has installed generation for these projects. These projects will be included in the program.

5. Implementation Schedule

Upon PSCW approval of WPL's proposed plan, WPL will take the following steps:

6. Appendix

6.1. Market Potential

6.2. Proposed tariff for BREDG

6.3. BREDG Budget

6.4. Customer Example

6.5. Escrow Accounting

Biogas Renewable Energy Distributed Generation Program

Market Potential

Appendix 6.1

December 3, 2001

Market	Total Market Potential				
	Number of Customers	Average Generation (KW)	Proposed Participants (Number)	Total Generation (KW)	Projects Completed Annually
Ag Digesters					
Herd Size >200	121	150	30	4,500	10
Size 100 to 200	429	75	TBD		TBD
Landfills					
Medium	19	360	12	4,320	4
Waste Water Treatment Plants			TBD		TBD
Industrial Food Processing			TBD		TBD
TOTAL	569		42	8,820	14

Note: Ag digesters indicate potential for dairy only. Hog, chicken, and other applications also qualify for the program.

Proposed BREDG tariff Appendix 6.2

RENEWABLE ENERGY DISTRIBUTED GENERATION PLAN STANDARD SERVICE-Small scale generation less than 800 KW

1. Effective In

All territory served by the company

2. Availability

This tariff is available to entities that generate methane (biogas) from anaerobic digestion or operate landfills to produce gas as a fuel, and are currently on a general service rate. Generation capacity must be less than 800 KW.

This is an experimental rider which expires December 31, 2004. The terms and conditions of this rider may be modified before the expiration date.

3. Rate

Two options for rates:

Company owned generation-Purchase Price for methane equivalent to \$0.06 per kWh of electricity generated.

Customer owned generation-Purchase Price of
On-peak \$.07 per kWh
Off-peak \$.05.5 per kWh

On-peak is defined as 10 AM to 10 PM Monday thru Friday except for national holidays. Off-peak is defined as all other times.

4. Minimum Bill

Not applicable.

5. Options

- a. The customer can choose to maintain a performance guaranteed contract with WPL. WPL will evaluate projects with customer and provide capital for these projects and guarantee a cash flow for the project.
- b. WPL will own the generation from the customers' facility. WPL will pay the customer a fee for the amount of gas generated by the digester or landfill. The fee will be based on a purchase price for the electricity of \$.06 per kWh.
- c. The customer may request to have a direct connection to the interconnect switch for

the purpose of supplying electricity during a distribution outage. The cost of this option will be paid by the customer. This cost may be incorporated into a performance contract with WPL or as a reduction in the rate paid by WPL for biogas.

6. Miscellaneous Provisions

Customer will own and operate gas generation in manner that insures general availability of equipment 24 hours per day, 7 days per week with 70% availability.

BioGas renewable Energy Distributed Generation Budget

Appendix 6.3

	2002	2003	2004	TOTAL	ACCOUNTING
Projects (Number)					
Ag - Digesters	5	10	10	25	
Landfills	2	2	4	8	
Projects (KW)					
Ag Digesters	750	1,500	1,500	3,750	
Landfills	720	720	1,440	2,880	
Project costs					
Customer Projects	594,900	887,400	1,189,800	2,672,100	Finance amount
WPL investment	1,388,100	2,070,600	2,776,200	6,234,900	WPL rate base
Program Administration					
Fuel Purchase	36,744	118,244	236,488	391,476	FAC
Purchased electricity	110,100	386,474	772,947	1,269,521	FAC
Maintenance costs	59,943	210,413	420,827	691,184	WPL rate base
Program administration	59,130	61,496	63,955	184,581	Program cost (Escrow)
Contract incentives	177,077	264,142	354,154	795,373	Program cost (Escrow)
Total annual budget	442,994	1,040,769	1,848,372	3,332,135	

Assumptions:

Generation availability 95%

	AVERAGE SIZE (KW)	COST per KW	CUSTOMER Projects
Ag Digesters	150	1300	30%
Landfills	360	1400	30%

BioGas Renewable Energy Distributed Generation Customer Examples

Appendix 6.4

Customer Type	Ag Digesters		Landfills		Waste Water Treatment	
	4.50	6.00	4.50	6.00	4.50	6.00

BREDG Buyback Rate (\$/kWh)

Generation	Capacity (KW)	Annual Generation (kWh)	Heat Recovery	Ag Digesters	Landfills	Waste Water Treatment
	135	1,123,470	YES	135	324	27
		1,123,470	YES	1,123,470	2,696,328	224,694
				NO	NO	Variable
				NO	NO	Variable

Installed cost	Generation	Support Equipment	Total
	120,000	75,000	195,000
	288,000	216,000	504,000
	24,000	55,000	79,000

Cash Flow	Payments from utility	Maintenance Cost	Cost of ownership	Net Cash Flow
	50,556	15,729	47,559	(12,731)
	67,408	15,729	47,559	4,121
	121,335	37,749	87,101	(3,515)
	161,780	37,749	87,101	36,930
	10,111	3,146	13,653	(6,687)
	13,482	3,146	13,653	(3,317)

Assumptions:

Availability is 95%
 Maintenance is present valued and divided by total energy produced=1.4 cents per kWh
 Cost of ownership is principal and interest::

	Term (Years)	Rate (%)
Ag Digesters	5	0.07
Landfills	7	0.05
WWTP	7	0.05

Escrow Accounting

Appendix 6.5

Escrow accounting is a method of accounting for a specific cost to provide service to customers in a manner that insures that the specific cost is not over- or under-collected from customers. It has been used most recently for Demand Side Management costs and consists of the following process:

Rate Case Process First Year:

A cost being tracked by an escrow accounting method would first be estimated and included in a forward-looking test year. Upon audit and Commission approval, an annual amount for this cost would be determined and approved for collection from customers. In this case let's assume that escrow accounting was approved and the amount is \$1,200 per year. Starting with the first month that the amount is collected, the following will take place: The monthly billings to customers will include collection of these costs within the approved rates. The amounts collected would be recorded as normal revenue with corresponding accounts receivable from customers. Starting with that same month, an entry would be made in the books of the company to record \$100 (representing one twelfth of the amount) in expense and record \$100 in the escrow account. After one full year, the amounts recorded in expense and the escrow would each total \$1,200. The same amount will have been collected in revenues.

Escrow Account Expenditures Process First Year:

During the same time that collections are being made for the escrow amounts, let's assume that actual expenditures in the first year for this item was \$150 per month, or a total of \$1,800. These amounts would be recorded in the escrow account with a corresponding outlay of cash to pay for the items.

Rate Case Process Second Year:

Now that one year of the escrow amounts has passed and we are into the second year, let's assume that our forecast of these expenditures is again \$1,200. Let us also assume the rate case audit agrees that the expenditure level will be \$1,200, and the expenditures included in the escrow account were proper. History for the prior year shows actual expenditures exceeded collections from customers by \$600. As such amounts are approved as reasonable, the approved rates will now start collecting \$1,800 (\$1,200 for current year estimated expenditures and \$600 of over expenditures from last year currently in the escrow account) from customers.

Escrow Account Expenditure Process Second Year:

During this period there will continue to be an entry to record as expense the \$1,200 level of approved expenditures; but in this case there will also be an additional \$600 representing the under-collection from the prior year. Let's assume this year, actual expenditures are \$1,200. Thus, the escrow account would be charged with the \$1,200 during the year, and the same amount of cash would go for expenses.

Summary:

If we assume that the program concludes at the end of two years, here is what we see:

Revenues collected for year one (\$1,200) and year two (\$1,800) total \$3,000.

Expenditures on escrow programs for year one (\$1,800) and year two (\$1,200) total \$3,000.

Amounts expensed for the escrow program for year one (\$1,200) and year two (\$1,800) total \$3,000.

Thus, the dollar amount of expense equals the dollar amount collected from customers. Also, the income statement had total collections by year equal to total amounts expensed each year - the matching principle at work.