UTILITY COMMITTEE

A G E N D A

December 11, 2006 - 4:30 P.M. - Council Chambers - City Hall - City of Dover

Public comments are welcomed on any item and will be permitted at appropriate times. When possible, please notify the City Clerk *(736-7008 or e-mail at Tmcdowell@dover.de.us)* ***should you wish to be recognized.***

AGENDA ADDITIONS/DELETIONS

1. Green Energy Presentation *(Scott Lynch and Kimberly Schlichting)*

2. Green Energy Grant Limits and Regulations

3. Adjournment by 5:00 P.M.

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THE AGENDA ITEMS AS LISTED MAY NOT BE CONSIDERED IN SEQUENCE. THIS AGENDA IS SUBJECT TO CHANGE TO INCLUDE THE ADDITION OR THE DELETION OF ITEMS, INCLUDING EXECUTIVE SESSIONS.

ACTION FORM

TITLE: Green Energy Grant Limits and Regulations **AGENDA ITEM:** 12/11/06 - 2

PROCEEDING: Utility Committee
DEPARTMENT OF ORIGIN: City Manager's Office
PREPARED BY: Terry Tieman

SUBJECT: Green Energy Grant Limits and Regulations	**DATE SUBMITTED:** 11/27/06
RELATED PROJECT: N/A	
APPROVALS: City Manager	
EXHIBITS: Municipal Utilities' Green Energy Fund Program Effective: January 1, 2007	
EXPENDITURE REQUIRED: N/A	**AMOUNT BUDGETED:** N/A
FUNDING SOURCE (Dept./Page in CIP & Budget): N/A	
TIMETABLE: Program is mandated to begin January 1, 2006	

RECOMMENDED ACTION: Staff recommends adopting Municipal Utilities' Green Energy Fund Program caps and regulations as presented in in the attached document.

BACKGROUND AND ANALYSIS: In the summer of 2005, the State of Delaware issued a Renewable Energy Portfolio Standard (Delaware Code, Title 26, Chapter 1, Sections 351-363). Section 363 - Special provisions for municipal electric companies and rural electric cooperatives reads as follows:

> Municipal electric companies and rural electric cooperatives may elect to be exempt from the requirements of this subchapter provided that, on or before June 1, 2006, they:
>
> (1) Submit a written notice to the General Assembly;
> (2) Alert their end-use customers with notices inserted in 2 consecutive electricity bills;
> (3) Offer their retail customers a voluntary program for purchasing renewable energy under competitive rates; and
> (4) Either contribute to the Green Energy Fund at levels commensurate with other retail electricity suppliers or create an independent, self-administered fund separate from the Green Energy Fund to be used in support of energy efficiency technologies, renewable energy technologies, or demand side management programs, into which they make payments of $0.178 for each megawatt-hour they sell, transmit, or distribute in the State. (75 Del. Laws, c. 205, § 1.)

The City of Dover has followed the four steps to be completed and has developed proposed green energy grant limitse and regulations to meet the requirements effective January 1, 2007. To fulfill section (4) the City must have green energy grant limits and regulations in place.

The City staff is recommending we adopt the attached "Municipal Utilities' Green Energy Fund Program" developed by the Delaware Municipal Electric Corporation (DEMEC). The attached regulations and grant limits will allow the City to provide comparable grant limits and regulations to most other municipal and investor owned utilities within Delaware. The limits proposed are equivalent to Delaware Electric Cooperative. We believe they will encourage the implementation of green energy projects. Grants are proposed for photovoltaic systems, solar water heating, small wind turbines, fuel cells, and geothermal heat pumps. All of the grants are for 50% of the installed costs with caps for residential projects ranging from $2,500 for heat pumps to $15,000 for fuel and photovoltaic cells. Non-residential grants range from $10,000 to $30,000. The attached details the caps and regulations.

The program along with all the other municipal programs will be administrated through the Delaware Energy Office. Dover funding is collected through the Green Energy Rate adopted in July. Funds are sent to DEMEC which will hold them in trust until disbursements are approved by the Delaware Energy Office.

DRAFT ~ For Discussion Purposes Only



MUNICIPAL UTILITIES'

Green Energy Fund Program

Effective:
January 1, 2007



Encouraging and Promoting
Renewable Energy Technologies & Energy Efficiencies

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1.0 Purpose

Delaware's Renewable Energy Portfolio Standards encourages and promotes the use of electricity from renewable energy resources, the use of energy efficiency technologies, and renewable energy technologies.

The purpose of this policy is to prescribe procedures relating to the Municipal's Green Energy Fund, which is an independent, self-administered fund separate from the state's Green Energy Fund, pursuant to 26 Del. C. Chapter 1, Subchapter III-A, §363 the Delaware Renewable Energy Portfolio Standards. It is the goal in establishing this policy to provide a streamlined procedure for distributing the municipal's Green Energy Funds.

This policy provides rules of practice and procedure for application and disbursement of Municipal Green Energy Fund grants for renewable energy projects in Delaware.

2.0 Definitions

For purposes of this regulation, the following words and phrases shall have the meanings set forth below.

"DEMEC" means the Delaware Municipal Electric Corporation, Incorporated.

"Department" means the Department of Natural Resources & Environmental Control, the Delaware Energy Office, or such other agents as the department or Secretary may designate.

DEMEC Members include the towns and cities of Clayton, Middletown, Smyrna, Newark, New Castle, Seaford, Milford, Dover and Lewes.

"DEMEC Member Service Territory" means the service territory of DEMEC members, as such territory is reflected in the electric service territory maps maintained by the Delaware Public Service Commission under the authority of 26 Del. C. § 203B.

Energy Efficiency refers to products or systems aimed at using less energy to do the same or better job than conventional products or systems.

"Freeze Tolerance Limit" means the temperature below which a Qualifying System for Solar Water Heating might suffer damage attributable to freezing.

"Fuel Cell" is an electrochemical energy conversion device which converts the chemical energy from a fuel directly into electricity and heat.

"Geothermal Heat Pump" means either an open or closed loop system or direct expansion system that uses the thermal energy of the ground or groundwater as the heat source and heat sink for residential or non-residential space heating and/or cooling. It may provide both space heating and cooling, cooling only or heating only functions. A closed loop system consists of a ground heat exchanger in which the heat transfer fluid is permanently contained in a closed system. An open loop system consists of a ground heat exchanger in which the heat transfer fluid is part of a

larger environment. A direct expansion system consists of a geothermal heat pump system in which the refrigerant is circulated in pipes buried in the ground, rather than using a heat transfer fluid, such as water or antifreeze solution in a separate closed loop, and fluid to refrigerant heat exchanger.

"Grid-connected", **"Grid-tied"** or **"Interconnected"** means a condition in which a Qualifying System that is an electrical generating system serves and is electrically connected to an electrical load that is also connected to and served by the local utility electrical grid. The delivery or ability to deliver, any portion of the generating capacity into the utility electrical grid is not required, nor must the loads served be only alternating current loads. The Photovoltaic or Wind Turbine systems need only to be capable of serving electrical loads that would otherwise be served by the local utility.

"Kilowatt" means 1,000 Watts.

"Kilowatt-hour" means the basic unit of electric energy equal to one Kilowatt of power supplied to or taken from an electric circuit steadily for one hour. One-Kilowatt hour equals 1,000 Watt-hours. Electric energy is commonly sold by the Kilowatt-hour.

"Municipals" mean the nine DEMEC members including the towns and cities of Clayton, Middletown, Smyrna, Newark, New Castle, Seaford, Milford, Dover and Lewes.

"Municipal Green Energy Fund" means the fund established by 26 Del. C. 1, Subchapter 3A § 363 and administered by DEMEC.

"Nonresidential" means all classes of customer purchasing electric power for uses other than for individual households. These groups of customers generally purchase electric power for commercial and industrial purposes. When used as an adjective with respect to Qualified Systems or Green Energy Program Grants, such term refers to systems owned by, or leased to, or grants awarded to Nonresidential persons.

"Participating Contractor" An appropriately Delaware and local jurisdictional licensed contractor who has submitted to the Department an application designated by the Department with all required attachments and maintains in full force all required insurance and warranties as described in Section 5.6.

"Passive Solar Design" A residential or non-residential building design that uses no external mechanical power, such as pumps or blowers, to collect and move solar heat.

"Photovoltaic" means a non-mechanical semiconductor device, most commonly made of silicon that produces direct current (dc) electricity from sunlight.

"Placed in Service" means installed, operational, and producing output.

"Professional Engineer" means "engineer", as defined in Title 24 Del. C., Chapter 28, *Professional Engineers,* namely, a person who by reason of his or her advanced knowledge of mathematics and the physical sciences, acquired by professional education and practical

experience, is technically and legally qualified to practice Professional Engineering, and who is licensed by the Delaware Association of Professional Engineers.

"Purchaser" means the purchaser or lessee of a Qualifying System.

"Qualifying System" has the meaning as set forth in Section 4.0.

"Renewable Energy Technology" shall have the meaning as prescribed in 29 Del. C. Chapter 80.

"Renewable Fuel" means a non-nuclear fuel that can be derived from non-fossil energy sources that are naturally replenishing and virtually inexhaustible.

"Residential" means the class or classes of customers purchasing electric power for household uses. When used as an adjective with respect to Qualified Systems or Green Energy Program Grants, such term refers to systems owned by, or leased to, or grants awarded to Residential persons.

"Retailer" means the vendor or lessor of a Qualifying System.

"Secretary" means the Secretary of the Department of Natural Resources and Environmental Control.

"Solar Pathfinder™" is a non-electronic instrument that measures the annual solar potential for a given site.

"Solar Shade Analysis" means an on site evaluation using a Solar Pathfinder™ or functionally equivalent device that measures the annual solar potential for the given site.

"Solar Water Heating" means the heating of water by use of the sun's energy rather than electricity or gas or some other means.

"State" means the State of Delaware.

"Ton of Capacity" means 12,000 British Thermal Units (BTU) per hour of capacity.

"Watt" means the basic unit of measure of real electric power, or rate of doing work.

"Watt-hour" means the basic unit of measure of electric energy consumption. The total amount of energy used in one hour by a device that requires one Watt of power for continuous operation.

"Wind Turbine" means a mechanical/electrical system that converts the kinetic energy of blowing wind into mechanical or electric power.

3.0 Municipal Green Energy Fund

The Delaware 143rd General Assembly enacted and Governor Minner signed into law Senate Bill

74, which amended Title 26 of the Delaware Code to include a new subchapter creating Renewable Energy Portfolio Standards. The law includes provisions for municipal electric utilities to establish an independent, self-administered fund to support renewable energy technologies, energy efficiency technologies, or demand side management programs. Programs may receive preference due to system benefits.

The programs are described in full in this regulation and include the following:

Municipal Green Energy Program
Energy Efficiency Program
Voluntary Green Energy Purchase Program

4.0 Municipal Green Energy Program

4.1 General Provisions

Funding is limited; all grants made under the Municipal Green Energy Program are on a first-come first-served basis and may receive preference due to system benefits. Under no circumstances will DEMEC or the Department issue grants for land acquisition in association with any project proposed in the Municipal Green Energy Program.

4.2 Eligibility

The Municipal Green Energy Program is available to electric customers which are contributing to the Municipal Green Energy Fund. All eligible equipment and products must be installed in Delaware and used solely for the energy requirements of the municipal utility customers.

4.3 Grant Reservation Request

Customers and contractors applying for any grant must provide the following information to the Department prior to installing the system:

- 4.3.1 Completed Grant Reservation Form signed by both customer and contractor
- 4.3.2 The type of qualifying system
- 4.3.3 Copy of project estimate, purchase order, or letter of intent
- 4.3.4 Copy of the customer's recent municipal electric bill which is contributing to the Municipal Green Energy Fund
- 4.3.5 System schematic or line drawing
- 4.3.6 Plot plan illustrating well, turbine, or module location (wind and geothermal only, photovoltaic when system is ground mounted)
- 4.3.7 Manual J calculation (geothermal only)
- 4.3.8 Detailed system design and a predicted performance calculation verified by a Professional Engineer. (Non-residential solar water heating systems only.)
- 4.3.9 Roof diagram illustrating the following:
  - 4.3.9.1 Roof dimensions (angle, length and width)
  - 4.3.9.2 Location of collectors or modules on roof
  - 4.3.9.3 Location of any roof-mounted or building-mounted equipment

4.3.9.4 Orientation & Tilt of array or collectors

4.3.9.5 Areas of shading (Provide Solar Pathfinder results for all cases where shading occurs between 9:00 a.m. and 3:00 p.m. Results of the solar shade analysis must determine that 70% of the annual solar path's area is shade free to be considered for a grant.)

4.4 Evaluation of Grant Reservation Request

Upon receipt of the Grant Reservation Request and supporting documents, the Department will perform an evaluation to check the proposal package for its compliance with the requirements noted above. If the proposal package is complete, the Department will process the Grant Reservation and issue a Confirmation and Claim Form to the applicant and provide a copy to DEMEC. All requirements as outlined in Section 4.3 must be provided to the Department prior to processing the grant reservation.

The Department will notify DEMEC which will reserve the funds for the project described in the Grant Reservation Request for six (6) months from the date of the reservation for residential applicants and twelve (12) months from the date of reservation for non-residential applicants. Since all grants are reserved on a first come-first served basis, viable projects that are not completed within the required time will be placed at the end of the queue and issued an extension of six (6) months from the date of the expired reservation for residential applicants and twelve (12) months from the date of expired reservation for non-residential applicants. To be considered for a reservation extension, the Department and DEMEC will require a project status and summary in writing fourteen (14) business days prior to the expiration of the original reservation.

4.5 Claim for and Distribution of Green Energy Program Grants

After installation, the customer and contractor must provide the following to the Department:

4.5.1 Completed Confirmation and Claim form signed by customer and contractor

4.5.2 Copy of electrical, plumbing or building inspection

4.5.3 Copy of completed and approved municipal member Interconnection Agreement (photovoltaic, wind, fuel cell) or similar document from a non-regulated electric supplier which is contributing to the Municipal Green Energy Fund

4.5.4 Copy of product specification sheets

4.5.5 Copy of final sales invoice (invoice must include actual price paid, itemized list of components, labor, permit fees, method of payment)

4.5.6 Copy of warranty agreement

4.5.7 Copy of verification of completion of installation signed by customer and contractor.

Upon receipt of the completed Reservation Claim Form and all final documentation pertaining to the project as noted in Section 4.5.1-4.5.6, the Department will evaluate the Reservation and Claim Form and the required accompanying documents for consideration of grant approval and render recommendation of approval to DEMEC. The contractor and customer are fully responsible for insuring that all forms and documentation have been supplied and the system meets all program requirements. The Department and/or DEMEC representatives may make an inspection of the systems prior to final grant approval.

The Department will process the grant within a reasonable time; usually within 30 days of receipt of the Reservation and Claim Form and all supporting documentation. The Department will provide DEMEC with a determination that all grant requirements have been met. DEMEC will ordinarily process the payment to the purchaser, however, if the purchaser so requests in writing and documentation reflects the grant value was reduced directly from the purchase price, DEMEC will process the payment to the retailer or installing contractor.

Upon written request to the Department, and subject to DEMEC approval, DEMEC will pay the grant in two installments. Twenty-five percent 25% of the grant paid after the equipment is delivered to the installation site and all required permits, approvals, certifications from all jurisdictions having authority are secured. The remaining twenty-five percent is paid when the system is operational and approved by the utility and/or appropriate inspection agent. Both the Department and DEMEC reserve the right to review any installation prior to any partial or final grant payment.

4.6 Green Energy Program Participating Contractor Guidelines

4.6.1 Participating Contractor Application

Contractors installing qualifying photovoltaic, solar water heating, geothermal heat pumps, small wind turbines, or fuel cells must complete the Participating Contractor Application prior to installing systems within the Municipal Green Energy Program. The application will consist of the following:

- 4.6.1.1 Name of company and key contact information
- 4.6.1.2 Brief history and organizational structure of company
- 4.6.1.3 Education, experience and licensure
- 4.6.1.4 General liability and statutory worker's compensation
- 4.6.1.5 Statement of reliability and good standing

4.6.2 Education and Licensure

Participating Contractors shall maintain appropriate education and licenses to insure that only professionally designed systems are installed within the Program. The Participating Contractor must be licensed in the State of Delaware and in local jurisdictions as required.

Where industry certification programs have been promulgated, grant recipients are encouraged to use industry certified contractors.

4.6.3 Insurance Requirements

The Participating Contractor and anyone acting under its direction or control or on its behalf shall at its own expense procure and maintain in full force at all times Commercial General Liability Insurance with a bodily injury and property damage combined single limit of liability of at least ONE MILLION DOLLARS ($1,000,000) for any occurrence.

4.6.4 Statement of Reliability and Good Standing

Contractor must be reliable and in good standing with a "Satisfactory Record" (or no negative reports) with the Better Business Bureau. The Contractor shall provide a copy of their Better

Business Bureau report to the Department upon request. Reports may be obtained at the following address.

BBB of Delaware
1415 Foulk Road, Suite 202
Foulkstone Plaza
Wilmington, DE 19803
Phone: (302)230-0108
Fax: (302)230-0116
Web Site: www.delaware.bbb.org
Email: info@delaware.bbb.org

4.6.5 Limitation of Funds

The Program funds are limited. The Participating Contractor shall follow program guidelines to insure reservation of funds prior to installing a qualifying system.

4.6.6 Owner's Manual Minimum Requirements

Contractors are required to provide each Program participant with an owner's manual. At a minimum, the owner's manual shall include the following:

- 4.6.6.1 Name and address of the seller
- 4.6.6.2 System model name or number
- 4.6.6.3 Identification and explanation of system components
- 4.6.6.4 Description of system operation
- 4.6.6.5 Description of system maintenance
- 4.6.6.6 Description of emergency procedures
- 4.6.6.7 Vacation procedures
- 4.6.6.8 Systems warranty

4.7 Warranty

All qualifying systems receiving a Green Energy Program grant must have a full 5-year warranty against component failure, malfunction and premature output degradation. The warranty must cover all components for which the program incentive is granted and cover the full cost of repair and replacement of all components of the system. For professionally installed systems, the warranty must cover the labor to remove and replace defective components and systems.

4.8 Code Compliance

All qualifying systems must be installed in accordance with the standards and specifications of the manufacturers of the components in the system, in compliance with all applicable local electric and building codes, local ordinances and these guidelines. Where discrepancies, if any, exist with these guidelines and local codes, local codes shall govern.

5.0 Green Energy Program Renewable Energy Technologies

5.1 Photovoltaic Systems

5.1.1 Grant Limits

Subject to availability of funds, the Municipal Green Energy Program offers grants for grid-connected photovoltaic systems installed by qualified contractors and customers up to 50% of the total installed costs. Grants will not exceed $_____ (see attached table) per residential dwelling for residential systems and $_____ (see attached tabled) per non-residential facility for non-residential systems. A photovoltaic system may not have eligible qualifying photovoltaic system costs in excess of $12 per Watt.

5.1.2 Accepted Products and Equipment

5.1.2.1 Grid Interconnected

All photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of the most recent version of Underwriters Laboratory Standard 1703.

All qualifying grid-connected systems must comply with the Institute of Electrical and Electronic Engineers Standards Board (IEEE) 929, Recommended Practice for Utility Interface of Photovoltaic (PV) Systems, IEEE 1547, Standard for Interconnecting Distributed Resources with the Electric Power Systems and the appropriate generation interconnection requirements of the participating municipal member's, Technical Considerations Covering Parallel Operations.

All inverters must be certified by a nationally recognized testing laboratory for safe operation and be certified as meeting the requirements of Underwriters Laboratory Standards 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems.
All grid interconnected systems must be designed and installed to comply with the National Electric Code (NEC).

5.1.2.2 Non-Grid Interconnected or Stand-Alone

All photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of the most recent version of Underwriters Laboratory Standard 1703.

All non-grid interconnected or stand-alone systems shall be designed and installed to comply with the National Electric Code (NEC)].

5.1.3 Array Orientation and Tilt

Optimum array orientation is a 180° true bearing. However, the program accepts solar arrays oriented between South of due East and South of due West or between 80° and 260° magnetic. Systems installed between 260° and 80° magnetic or North of due East and North of due West are not eligible for a Green Energy Program Grant.

Optimum array tilt is equal to the latitude at the installation site. However, the program accepts array tilt parameters as specified by the module manufacturer which may allow for tilts greater than and less than latitude.

5.1.4 Array Shading

Photovoltaic arrays shall be installed such that the array has a minimum of six (6) hours of unobstructed sunshine daily inclusive of solar noon. A "solar window" of eight (8) hours of unobstructed sunshine is preferred.

The installing contractor is responsible for insuring that the system is free from shading. The installing contractor shall perform a “Solar Shade Analysis” to ensure the array meets the minimum daily sunshine requirements. Results of the solar shade analysis must determine that 70% of the annual solar path’s area is shade free to be considered for a grant.

5.1.5 Aesthetics

Aesthetics must be considered in the design and mounting of the photovoltaic array. The designing contractor must provide a roof schematic complete with roof dimensions, array placement, orientation and areas of shading to the Department prior to installation. The designing contractor must make every attempt to configure the modules in an aesthetically pleasing manner free from shading.

5.2 Solar Water Heating

5.2.1 Grant Limits

Subject to availability of funds, the Municipal Green Energy Program offers grants for solar water heating systems installed by qualified contractors and customers up to 50% of the total installed cost. Grants will not exceed $_____(see attached table) per residential dwelling for residential systems and $_____(see attached table) per non-residential facility for non-residential systems.

Solar water heating systems integrated into a radiant heating application are eligible for a grant up to 50% of the installed cost of the solar energy portion of the system. Grants will not exceed $_____(see attached table) per residential dwelling for residential systems and $_____(see attached table) per non-residential dwelling for non-residential systems.

5.2.2 Accepted Products and Equipment

A solar water heating system must be designed to reduce or eliminate the need for electric or gas heated water.

All qualifying residential solar water heating systems must be certified to meet the Solar Rating and Certification Corporation's (SRCC) OG- 300, Operating Guidelines and Minimum Standards for Certifying Solar Water Heating Systems: An Optional Solar Water Heating System Certification and Rating Program and have a Freeze Tolerance Limit of minus 21 degrees Fahrenheit without electrical power.

All qualifying non-residential solar water heating systems and solar energy systems integrated into a radiant heating application must utilize collectors certified to meet the Solar Rating and Certification Corporation's (SRCC) OG-100, Operating Guidelines for Certifying Solar Collectors.

Non-residential solar water heating systems will be required to submit a detailed system design and a predicted performance calculation verified by a Professional Engineer (P.E.)

5.2.3 Collector Orientation and Tilt

Optimum collector array orientation is a 180° true bearing. However, the program accepts solar collectors oriented between South of due East and South of due West or between 80° and 260° magnetic. Systems installed between 260° and 80° magnetic or North of due East and North of due West are not eligible for a Green Energy Program Grant.

Optimum collector tilt is equal to the latitude at the installation site. However, the program accepts collector tilt parameters as specified by the collector manufacturer which may allow for tilts greater than and less than latitude.

5.2.4 Collector Shading

All collectors shall be installed such that the collector array has a minimum of six (6) hours of unobstructed sunshine daily inclusive of solar noon. A "solar window" of eight (8) hours of unobstructed sunshine is preferred.

The installing contractor is responsible for insuring that the system is free from shading. The installing contractor shall perform a “Solar Shade Analysis” to ensure the array meets the minimum daily sunshine requirements. Results of the solar shade analysis must determine that 70% of the annual solar path’s area is shade free to be considered for a grant.

5.2.5 Aesthetics

Aesthetics must be considered in the design and mounting of the solar water heating collectors. The designing contractor must complete a roof schematic complete with roof dimensions, collector placement, orientation and areas of shading to the Department prior to installation. The designing contractor must make every attempt to configure the collectors in an aesthetically pleasing manner.

5.3 Small Wind Turbines

5.3.1 Grant Limits

Subject to availability of funds, the Municipal Green Energy Program offers incentives up to 50% of the total installed cost for small grid-connected wind turbines installed by a qualified contractor for a qualified customer. Small wind turbines shall be at least 500 Watts. Grants will not exceed $_____(see attached table) per residential dwelling for residential systems and $_____(see attached table) per non-residential facility for non-residential systems. A qualifying wind turbine system shall not exceed $5.00 per Watt installed.

5.3.2 Capacity Limits

Qualifying wind turbine systems shall be at least 500 Watts.

The Department may reject applications if the location of the proposed wind turbine system has an inadequate wind resource for reasonable utilization of the equipment as recommended by the turbine manufacturer. Wind resources can vary significantly; therefore, the contractor and customer must take care that the location has adequate wind for the turbine selected. It is strongly recommended that a professional evaluation of your specific site be completed. The Department may require additional evidence of feasibility prior to approving the grant reservation.

5.3.3 Accepted Products and Equipment

5.3.3.1 Grid Interconnected

All qualifying grid-connected small wind systems must use Underwriters Laboratory listed equipment and comply with the Institute of Electrical and Electronic Engineers Standards Board (IEEE) 929, Recommended Practice for Utility Interface of Photovoltaic (PV) Systems, IEEE 1547, Standard for Interconnecting Distributed Resources with the Electric Power Systems and the appropriate generation interconnection requirements of the municipal power delivery's, Technical Considerations Covering Parallel Operations of Customer Owned Generation.

All inverters or other systems used in interconnection must be certified by a nationally recognized testing laboratory for safe operation and be certified as meeting the requirements of Underwriters Laboratory Standards 1741, Standard for Static Inverters and Charge Controllers for Use in Photovoltaic Power Systems.

All grid interconnected systems must be designed and installed to comply with the National Electric Code (NEC).

5.3.3.2 Non-Grid Interconnected or Stand-Alone

All qualifying non-grid interconnected wind systems must use Underwriters Laboratory certified listed equipment and systems shall be designed and installed to comply with the National Electric Code (NEC).

5.4 Geothermal Heat Pump Systems

5.4.1 Grant Limits

Subject to availability of funds, the Municipal's Green Energy Program offers grants for geothermal heat pump systems installed by qualified contractors and customers at the following rates:

Residential:
$600 per ton not exceeding $_____(see attached table) per residential dwelling for residential systems installed with an Energy Efficiency Ratio (EER) of 15.0 and Coefficient of Performance (COP) of 3.4 or greater or 50% of the installed cost whichever is lower, or

$500 per ton not exceeding $_____(see attached table) per residential

dwelling for residential systems with an Energy Efficiency Ratio (EER) of 14.0 and Coefficient of Performance (COP) of 3.0 or greater or 50% of the installed cost whichever is lower.

Non-residential:
$600 per ton not exceeding $_____(see attached table) per non-residential facility for non-residential systems with an Energy Efficiency Ratio (EER) of 15.0 and Coefficient of Performance (COP) of 3.4 or greater or 50% of the installed cost whichever is lower, or

$500 per ton not exceeding $_____(see attached table) per non-residential facility for non-residential systems with an Energy Efficiency Ratio (EER) of 14.0 and Coefficient of Performance (COP) of 3.0 or greater or 50% of the installed cost whichever is lower.

5.4.2 Accepted Products and Equipment

Qualifying geothermal heat pump systems must be sized in accordance with good heating, ventilation and air conditioning design practices for the occupancy, location and structure. Contractor shall provide a Manual J calculation, or other equivalent calculation, to determine proper size of equipment.

All qualifying systems must have a warranty for protection of the integrity and performance of the system for at least five years. All units installed under this program must have a minimum EER of 14.0 and COP of 3.0. Qualifying systems must meet the following:

Closed loop systems shall qualify under rating conditions in accordance with ISO 13256-1.

Open loop systems shall qualify under rating conditions in accordance with ISO 13256-1.

DX systems shall qualify under rating conditions in accordance with ARI 870.

5.5 Fuel Cells

5.5.1 Grant Limits

Subject to availability of funds, the Municipal Green Energy Program offers grants for grid-connected fuel cells installed by qualified contractors and customers up to 50% of the total installed cost for fuel cell systems operating on a renewable fuel source. Grants will not exceed $_____(see attached table) for residential systems and $_____(see attached table) for non-residential systems.

5.5.2 Accepted Products and Equipment

5.5.2.1 Grid Interconnected

All Qualifying fuel cells systems must utilize a renewable fuel source and meet the National Fire Protection Association (NFPA) 853 for Stationary Fuel Cell Power Plants, the Institute of Electrical and Electronic Engineers Standards Board (IEEE) 519-Recommended Practices and Requirements for Harmonic Control in Electric Power Systems, the most current version of the American National Standards Institute (ANSI)

Z21.83 for Fuel Cell Power Plants, and input and output protection functions should be in compliance with ANSI C37.2 Device Function Number Specifications.

All grid interconnected systems must be designed and installed to comply with the National Electric Code (NEC).

5.5.2.2 Non-Grid Interconnected or Stand-Alone
All non-grid interconnected or stand-alone systems shall be designed and installed to comply with the National Electric Code (NEC).

6.0 Efficiency Program

6.1 General Provisions

The Energy Efficiency Program promotes projects aimed at using less energy to do the same or better job than conventional products or systems. Programs will be announced as they are introduced and implemented and may receive preference due to system benefit.

6.2 Eligibility

The Energy Efficiency Program is available to DEMEC's member electric customers which are contributing to the Municipal Green Energy Fund. All eligible equipment and products must be installed in Delaware.

7.0 Voluntary Green Energy Subscription Program

7.1 General Provision

The purpose of the Voluntary Green Energy Purchase Program is to allow customers the opportunity to purchase blocks of green energy at competitive market rates. The green energy blocks are generated from non-carbon based, qualifying renewable energy sources. By subscribing to this program, customers will be helping to improve the environment by reducing pollution and consumption of non-renewable resources.

7.2 Eligibility

The Voluntary Green Energy Purchase Program is available to municipal electric customers which are contributing to the Municipal Green Energy Fund.

7.3 Subscription Request

Municipal customers have the option to voluntarily purchase of blocks of green energy from their local utility company. Blocks of 100 kwh will be offered for one year terms and will be renewable yearly at the then current market rate. The amount of green energy blocks may be limited and will

be awarded on a first-come first-serve basis. Quantity may be limited to a customer's lowest monthly consumption in the preceding twelve months, i.e., 1,000 kwh usage would be limited to 10 blocks. If subscriptions exceed available green energy, customers will be placed on a priority list for the following year.

8.0 Administration of Green Energy Funds

Up to 7.5% of the moneys deposited in the Municipal Green Energy Fund may be used for administration of the fund.

9.0 Proprietary Application Information

Applicants are hereby notified that the Department intends to make all applications submitted available to non-State personnel for the sole purpose of assisting in its evaluation of the applications. These individuals will be required to protect the confidentiality of any specifically identified proprietary information obtained as a result of their participation in the evaluation.

Proposals submitted may contain trade secrets and/or privileged or confidential commercial or financial information which the applicant does not want to be used or disclosed for any purpose other than evaluation of the application. The use and disclosure of such data may be restricted, provided the applicant follows the Department's "Request for Confidentiality" procedure contained in the Department's "Freedom of Information Act" or "FOIA" regulation. It is important to understand that this FOIA regulation's confidentiality procedure is a necessary part of this regulation in that any information submitted to the Department is subject to public review unless deemed to be confidential by the Secretary in accordance with the criteria and procedures established in the FOIA regulation.

The burden lies with the applicant asserting the claim of confidentiality to meet the criteria established in the FOIA regulation.

10.0 Severability

If any section, subsection, paragraph, sentence, phrase or word of these regulations is declared unconstitutional by a court of competent jurisdiction, the remainder of these regulations shall remain unimpaired and shall continue in full force and effect, and proceedings there under shall not be affected.

Photovoltaic Systems

	Photovoltaic Systems Grant Funding	Not to Exceed for Residential	Not to Exceed for Non-Residential
DP&L	up to 50% of total installation costs	$22,500	$250,000
DEC	up to 50% of total installation costs	$15,000	$30,000
Clayton	up to 50% of total installation costs	$15,000	$30,000
Smyrna	up to 50% of total installation costs	$15,000	$30,000
New Castle (1)	Funding only available to schools. Contact City of New Castle for details.		
Middletown	up to 50% of total installation costs	$15,000	$30,000
Seaford	up to 50% of total installation costs	$15,000	$30,000
Milford	up to 50% of total installation costs	$15,000	$30,000
Newark (2)	up to 50% of total installation costs	$22,500	$250,000
Dover	up to 50% of total installation costs	$15,000	$30,000
Lewes (3)	up to 50% of total installation costs	$15,000	$30,000

Solar Water Heating

	Solar Water Heating Grant Funding	Not to Exceed for Residential	Not to Exceed for Non-Residential
DP&L	up to 50% of total installation costs	$3,000	$250,000
DEC	up to 50% of total installed costs	$3,000	$10,000
Clayton	up to 50% of total installed costs	$3,000	$10,000
Smyrna	up to 50% of total installed costs	$3,000	$10,000
New Castle (1)	Funding only available to schools. Contact City of New Castle for details.		
Middletown	up to 50% of total installed costs	$3,000	$10,000
Seaford	up to 50% of total installed costs	$3,000	$10,000
Milford	up to 50% of total installed costs	$3,000	$10,000
Newark (2)	up to 50% of total installation costs	$3,000	$250,000
Dover	up to 50% of total installed costs	$3,000	$10,000
Lewes (3)	up to 50% of total installed costs	$3,000	$10,000

Solar Water Heating Integrated into a Radiant Heating Application

	Solar Water Heating w/ Radiant Grant Funding	Not to Exceed for Residential	Not to Exceed for Non-Residential
DP&L	up to 50% of total installation costs	$5,000	$250,000
DEC	up to 50% of total installed costs	$5,000	$10,000
Clayton	up to 50% of total installed costs	$5,000	$10,000
Smyrna	up to 50% of total installed costs	$5,000	$10,000
New Castle (1)	Funding only available to schools. Contact City of New Castle for details.		
Middletown	up to 50% of total installed costs	$5,000	$10,000
Seaford	up to 50% of total installed costs	$5,000	$10,000
Milford	up to 50% of total installed costs	$5,000	$10,000
Newark (2)	up to 50% of total installation costs	$5,000	$250,000
Dover	up to 50% of total installed costs	$5,000	$10,000
Lewes (3)	up to 50% of total installed costs	$5,000	$10,000

Small Wind Turbines

	Small Wind Turbines Grant Funding	Not to Exceed for Residential	Not to Exceed for Non-Residential
DP&L	up to 50% of total installation costs	$22,500	$100,000
DEC	up to 50% of total installed costs	$5,000	$10,000
Clayton	up to 50% of total installed costs	$5,000	$10,000
Smyrna	up to 50% of total installed costs	$5,000	$10,000
New Castle (1)	Funding only available to schools. Contact City of New Castle for details.		
Middletown	up to 50% of total installed costs	$5,000	$10,000
Seaford	up to 50% of total installed costs	$5,000	$10,000
Milford	up to 50% of total installed costs	$5,000	$10,000
Newark (2)	up to 50% of total installation costs	$22,500	$100,000
Dover	up to 50% of total installed costs	$5,000	$10,000
Lewes (3)	None Available	-	-

Fuel Cells

	Fuel Cells Grant Funding	Not to Exceed for Residential	Not to Exceed for Non-Residential
DP&L	up to 50% of total installation costs	$22,500	$250,000
DEC	up to 50% of total installed costs	$15,000	$30,000
Clayton	up to 50% of total installed costs	$15,000	$30,000
Smyrna	up to 50% of total installed costs	$15,000	$30,000
New Castle (1)	Funding only available to schools. Contact City of New Castle for details.		
Middletown	up to 50% of total installed costs	$15,000	$30,000
Seaford	up to 50% of total installed costs	$15,000	$30,000
Milford	up to 50% of total installed costs	$15,000	$30,000
Newark (2)	up to 50% of total installation costs	$22,500	$250,000
Dover	up to 50% of total installed costs	$15,000	$30,000
Lewes (3)	up to 50% of total installed costs	$15,000	$30,000

Geothermal Heat Pumps System -
w/ Energy Efficiency Ratio (EER) of 15.0 and Coefficient of Performance (COP) of 3.4 or greater

	Geothermal Heat Pumps System Grant Funding	Not to Exceed for Residential	Not to Exceed for Non-Residential
DP&L	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$25,000
DEC	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000
Clayton	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000
Smyrna	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000
New Castle (1)	Funding only available to schools. Contact City of New Castle for details.		
Middletown	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000
Seaford	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000
Milford	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000
Newark (2)	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$25,000
Dover	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000
Lewes (3)	$600 per ton or 50% of total installed costs; whichever is lower	$3,000	$20,000

Geothermal Heat Pumps System -
w/ Energy Efficiency Ratio (EER) of 14.0 and Coefficient of Performance (COP) of 3.0 or greater

	Geothermal Heat Pumps System Grant Funding	Not to Exceed for Residential	Not to Exceed for Non-Residential
DP&L	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$25,000
DEC	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000
Clayton	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000
Smyrna	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000
New Castle (1)	Funding only available to schools. Contact City of New Castle for details.		
Middletown	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000
Seaford	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000
Milford	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000
Newark (2)	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$25,000
Dover	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000
Lewes (3)	$500 per ton or 50% of total installed costs; whichever is lower	$2,500	$20,000

Notes:

(1) The City of New Castle is providing funding for community school projects only. Please contact the City of New Castle for further information.

(2) The City of Newark is contributing to the State's Green Energy Fund. Please contact the City of Newark or the State Energy Office for further information.

(3) The City of Lewes is making available 1/3 of their total Green Energy Funds for renewable grants.