



**Delaware Electric Cooperative
Sustainability Report
2014-2015**

Introduction From DEC's President and CEO

Every day employees at Delaware Electric Cooperative arrive at work with one clear objective; 'To Keep the Lights On.' That's Delaware Electric Cooperative's motto. DEC leadership and employees live by that mantra, but their dedication to the 87,000 member-owners they serve runs much deeper than that simple phrase.

Delaware Electric Cooperative has transformed itself from a small, rural electric provider back in the 1930s, to a nationally recognized utility with a reputation of innovation and a dedication to providing members with energy that is reliable, affordable and, perhaps most important, sustainable. Despite developing a national reputation for excellence, Delaware Electric Co-op has stayed true to its founding mission of providing personalized service to members. Employees have not forgotten that it is their job to make their communities a better place for everyone to live.

DEC is focused on the future, which promises to bring extraordinary changes to the energy industry. Co-op leaders are proud to be taking a proactive role in shaping this energy revolution and making sure members have reliable, affordable and clean energy for years to come. DEC has proven its commitment to the environment and continues to increase its portfolio of renewable resources. Cooperative leaders are dedicated to reducing energy consumption and are providing members with the tools they need to conserve energy, all while maintaining the Co-op's position as the state's lowest cost energy provider.

By 2025, Delaware Electric Co-op will purchase or produce 25 percent of its power from renewable resources and will reduce energy and demand 15 percent by 2015.

This report will highlight DEC's commitment to promote renewable and alternative sources of energy and will highlight the many ways our Board of Directors and employees are working to reduce environmental impacts and educate members about smart energy consumption.

Bill Andrew
President and CEO



Bill Wells
Chairman, DEC's Board of Directors



DEC's Greenwood, Del. Headquarters

Seven Cooperative Principles:

1. Voluntary and Open Membership

Cooperatives are voluntary organizations, open to all people able to use its services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

2. Democratic Member Control

Cooperatives are democratic organizations controlled by their members—those who buy the goods or use the services of the cooperative—who actively participate in setting policies and making decisions.

3. Members' Economic Participation

Members contribute equally to, and democratically control, the capital of the cooperative. This benefits members in proportion to the business they conduct with the cooperative rather than on the capital invested.

4. Autonomy and Independence

Cooperatives are autonomous, self-help organizations controlled by their members. If the co-op enters into agreements with other organizations or raises capital from external sources, it is done so based on terms that ensure democratic control by the members and maintains the cooperative's autonomy.

5. Education, Training and Information

Cooperatives provide education and training for members, elected representatives, managers and employees so they can contribute effectively to the development of their cooperative. Members also inform the general public about the nature and benefits of cooperatives.

6. Cooperation Among Cooperatives

Cooperatives serve their members most effectively and strengthen the cooperative movement by working together through local, national, regional and international structures.

7. Concern for Community

While focusing on member needs, cooperatives work for the sustainable development of communities through policies and programs accepted by the members.

Where Does DEC's Energy Come From?

Delaware Electric Cooperative purchases or produces the power delivered to its members from a variety of sources. DEC's power sources include nuclear generation, natural gas, coal, wind, landfill gas and solar. The Cooperative uses a diversified portfolio of energy sources to provide the greatest economic benefit to members while reducing the impact on the environment.

Delaware Electric Cooperative is part owner of Old Dominion Electric Cooperative or ODEC, located in Glen Allen, Virginia. ODEC is an electrical generation and transmission cooperative, which provides power to 11 electric cooperatives in Delaware, Maryland and Virginia.

ODEC has partial or full ownership of several power plants in Virginia and Maryland and provides electric to 1.2 million people. ODEC is owned by Delaware Electric Cooperative and the other 10 electric cooperatives it serves. The organization was formed in 1948 and continues to help cooperatives provide efficient and renewable energy to their members. The power generating facilities owned by ODEC are among the most environmentally friendly in the nation. ODEC has an exceptional record when it comes to its environmental standards, receiving no notices of violations at the plants they operate.

In addition to the nuclear, coal and natural gas plants owned or operated by ODEC, DEC owns a solar energy farm, which provides clean, reliable energy delivered directly to member homes. In early 2014, Delaware Electric Cooperative also began purchasing two megawatts of energy produced at a landfill gas facility in Kent County, Delaware.



◀ ODEC's Clover Power Station is fitted with an extensive emissions control system. The plant is one of the cleanest in the nation.

A Diversified Portfolio of Energy Sources

-Nuclear

-Solar

-Coal

-Landfill Gas

-Wind

-Natural Gas

New Power Plant To Provide Clean, Renewable Energy to Co-op Members

Delaware Electric Cooperative has joined with Old Dominion Electric Cooperative (ODEC) to announce the construction of a new natural gas driven power plant to provide clean, sustainable energy to DEC's 87,000 members. The plant will be owned by Old Dominion Electric Cooperative based in Glen Allen, Virginia. Delaware Electric Co-op and ten other electric cooperatives in Maryland and Virginia purchase their power from ODEC and will each own a portion of the new power plant. The natural gas plant will be built in Cecil County, Maryland next to an existing gas powered plant. Once completed, the facility will produce 1,000 megawatts of electricity, enough to power 390,000 homes.



The new power plant will be built next to an existing plant, pictured here in Cecil County, Md.

According to Delaware Electric Cooperative President and CEO Bill Andrew, “This project will provide members with a stable source of energy for decades, keep electric rates low and allow the Co-op to meet the energy demands of a growing population in central and southern Delaware. Natural gas is affordable and much cleaner than most traditional fossil fuels.”

The construction of the Cecil County power plant will not have an impact on member rates. The project will help Delaware Electric Co-op maintain a diverse portfolio of energy sources, including wind, coal, solar, nuclear and landfill gas. “Our goal is to generate power with minimal impacts on the environment, while also providing members with the lowest electric rates in Delaware. This new project will help the Co-op accomplish that goal,” said Andrew. The natural gas driven power plant is expected to be operational by 2017.

Wind Power

Wind power has proven to be a sustainable source of clean power that DEC is proud to purchase and deliver to member homes. Old Dominion Electric Cooperative has purchased approximately 270 megawatts of wind power through long term power purchase agreements. As a member of ODEC, that energy is also part of DEC's renewable portfolio. ODEC is also a proud founding member of the National Renewables Cooperative Organization, which promotes the development of renewable energy resources for cooperatives across the country.

Cooperative Solar Energy Farm Now Producing Power

Clean, renewable energy is now flowing to hundreds of homes in rural Delaware, courtesy of Delaware Electric Cooperative's Bruce A. Henry Solar Energy Farm near Georgetown. Construction on the solar energy farm began in January of 2013 as more than 40 Delaware contractors worked to install 16,000 solar panels. The panels were manufactured in the First State by Motech Americas, based in Newark and the project was managed by SunEdison. "Once plans to build the solar farm were finalized, we decided to use products made in Delaware. Aside from the obvious environmental benefits, this project has provided a boost to the state's economy," said Bill Andrew, President and CEO of Delaware Electric Cooperative.

The solar farm is capable of producing four megawatts of electricity, enough to power 500 homes. The project cost \$14 million and Co-op officials said the facility could eventually be expanded to 40 acres, with the ability to produce power for 1,000 homes. The renewable energy project was developed by SunEdison and in the first year of operation the farm will prevent more than 12 million pounds of carbon dioxide from being released into the air—the equivalent of taking 1,239 cars off the road.

The farm is named after longtime DEC board member Bruce A. Henry. Henry, who is a strong proponent of renewable energy and sits on the Board of Old Dominion Electric Cooperative, which provides energy to Delaware Electric Co-op and ten other electric cooperatives in Delaware, Maryland and Virginia. Delaware utilities will be required to purchase or produce 25 percent of their energy from renewable sources by 2025 and the solar energy farm will help DEC comply with state regulations.

Currently, ten percent of the Co-op's energy comes from green sources. Earlier this year, DEC also announced a deal to purchase energy produced at the Sandtown Landfill in Kent County, Del. New engines are being built at the site, which will convert excess methane gas into electricity. The Co-op expects to purchase enough energy from the facility to power 1,000 homes.



Ten percent of the Co-op's power comes from clean, renewable sources.

Helping Members Install Renewable Projects Through Grants

Delaware Electric Cooperative is committed to providing members with financial assistance to help cover a portion of the cost to install renewable energy systems. DEC member-owners have received over \$3,000,000 in grants for the installation of solar electric systems, small wind turbines and geothermal heating and cooling systems.

That money has helped hundreds of members to install solar, wind or geothermal systems that reduce electric consumption, helping the environment. The grants are funded through a small charge to all members on each kWh sold. Since our grant program's inception in 2006, the program has provided over \$3,000,000 in grants for 407 geothermal heating and cooling systems, 450 solar installations, 11 solar hot-water heating systems and 12 small wind turbine projects.

Renewable Projects Installed Since 2006:

Geothermal: 407

Solar: 450

Wind: 12

Solar Hot Water: 11



Delaware Electric Cooperative installed solar panels on the roof of its Greenwood, Del. headquarters. The system, installed in 2010, has prevented 43,000 pounds of CO2 from being released into the atmosphere.

Delaware Electric Cooperative Now Purchasing Electricity From Landfill Gas-to-Energy Project in Kent County

Delaware Electric Cooperative is now purchasing power produced at the Delaware Solid Waste Authority's Landfill in Sandtown, Del. The non-profit utility is purchasing two megawatts of power generated at the site—enough to power 1,000 member homes. The energy is being produced by two new methane-driven engines constructed at the Landfill, which convert the methane gas produced by decomposing garbage into electricity. The engines were built by Ameresco, a company focused on renewable energy projects.

“We are thrilled the new engines are now producing clean, renewable energy for members of Delaware Electric Cooperative. The power, which is sent directly to member homes, is being purchased at a very competitive price and is produced in Delaware. This means the Co-op doesn't have to pay transmission fees to get the power to its members,” said Bill Andrew, President and CEO of Delaware Electric Cooperative. The project is also expected to reduce emissions at the Sandtown Landfill. According to the Environmental Protection Agency, gas-to-energy projects can lower emissions at landfills by 60 to 90 percent. If the methane gas wasn't being used to produce energy, it would be burned off, releasing emissions into the air. Currently, Delaware Electric Co-op purchases or produces ten percent of its power from renewable sources. The purchase of energy produced at the landfill will further bolster DEC's renewable portfolio. Under state law, all utilities in Delaware must purchase or produce 25 percent of their energy from renewable sources by 2025.

According to Andrew, “This is the first time the Co-op had directly purchased power from a landfill and we're looking at the possibility of further partnering with other landfills in the state. Not only is this project good for the environment, but we do not expect this to have an impact on electric rates.”



Beat the Peak:

To lower demand costs during peak energy usage times, DEC launched the “Beat the Peak” program in 2008. The program, which is now being used by more than 90 utilities across the country, reminds members to conserve energy during peak energy usage times when the Co-op is paying more for power. The Cooperative pays a monthly demand charge based on peak energy consumption. To lower energy costs, DEC has sent more than 47,000 free “Beat the Peak” in-home indicators to members, which light up when a peak event is approaching and during a peak energy usage event. Since its inception, the program has saved members and the Co-op about \$16 million, with a yearly savings of over \$2 million. We continue to market the program through videos, our website, social media, TV and radio appearances. The program is trademarked by DEC. The Co-op also offers a program to members called “Switch and Save.” After signing up for the program the Co-op installs a load management switch on electric water heaters and air conditioning units, which allows DEC to switch off those appliances during peak energy usage times. Members receive a \$2 credit on their monthly bill for each appliance controlled by the Co-op. Twenty-eight thousand switches have been installed so far and the program continues to grow.



Energy use across DEC's system drops dramatically during “Beat the Peak” alerts. Those savings are passed on to our members. The drop in energy on this chart represents a \$500,000 savings for DEC members.

Irrigation Grant Program:

In January of 2012, DEC launched a new Irrigation Grant Pilot Program to help Delaware farmers install environmentally friendly irrigation systems. The program provided funding to farmers to replace diesel irrigation pumps with electric pumps and offered financial help to farmers looking to install new irrigation systems. Variable frequency drives were also covered under the grant program. The drives are 96% efficient and help provide electric to large agricultural equipment in rural areas. The Co-op set aside more than \$1 million in 2012 and 2013 for the Irrigation Grant Pilot Program. Delaware's Department of Natural Resources and Environmental Control also agreed to pump hundreds of thousands of dollars in additional funding into the program. Delaware officials provided \$300,000 in grants to farmers, which helped growers convert diesel driven generators to electric. The state grants paid up to 30 percent of a farmer's non-utility costs for the conversion, such as labor and parts. In 2014, the Co-op offered farmers up to \$7,500 in grants to convert irrigation systems from diesel to electric. More than 400 farmers were helped by the program. Farmers receiving grant money have been required to sign up for the Co-op's irrigation load control rate. The rate not only saves farmers 18-25 percent on their electric bills, but it also allows DEC to shut off power to irrigation units during times of peak demand, lowering energy costs.



Other Energy Grants:

DEC is also proud to offer grants to qualifying members who install energy efficient heat pump water heaters, which reduce a home's energy consumption. Grants have also been provided to Delaware farmers who convert incandescent and CFL poultry lights to efficient LED lighting. Poultry LED lights use up to 83 percent less energy than traditional bulbs and thousands of the LED bulbs have been installed in poultry houses across our service territory.



Consumer Education:

DEC actively promotes a culture of communication and employees work hard to keep members "in the know." The Cooperative offers tips on energy usage and information about grant programs across a variety of platforms, including the monthly member and business newsletters, DEC's website, Facebook, Twitter and YouTube. DEC also reaches out to members to promote energy saving programs through various brochures and publications along with TV and radio announcements. In 2012 the Co-op launched a new Energy Insights program, providing members with a free comprehensive online analysis of their energy use, while offering tips to members to lower their monthly bills. Communication is the key to helping members save money and reduce their impact on the environment.



Encouraging Members to Support Green Energy:

Since 2006 Co-op members have been encouraged to purchase green energy through a special program offered by DEC. Members can voluntarily purchase green energy blocks for 20 cents per 100 kilowatt-hour. In the future, members will be able to purchase specific types of green energy, such as wind, solar and landfill gas. The program provides environmentally conscious members the choice to pay more for their power to support the development and sale of more renewable energy technologies in our state.



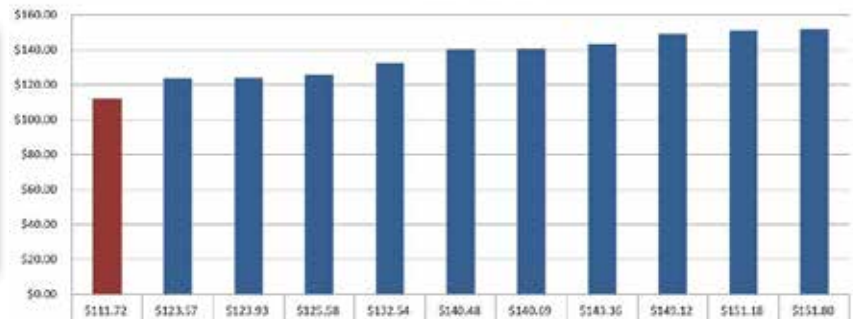
Recycling For a Better Future:

Delaware Electric Cooperative is committed to reducing its impact on the environment and consistently recycles materials used out in the field by linemen along with everyday office supplies. Everything from steel to ink cartridges are recycled.



DEC's Commitment to Sustainable Energy

DEC Rate Comparison Chart:



DEC's average 2014 winter electric rate is shown in red compared to Delaware's other electric providers.

For more than one decade DEC crews have helped provide habitat for ospreys living along Delaware's coast. Crews install utility poles with artificial nests, giving the majestic birds a safe place to raise their young.



Co-op linemen and employees frequently appear at community events and speak to children in Delaware schools. DEC maintains a constant presence in the community.

Commitment to the Community:

One of the seven cooperative principles asks our employees to maintain a community focus. DEC associates are committed to making Kent and Sussex Counties a better place for everyone to live. Employees support a variety of community organizations, including the United Way, Kiwanis Clubs, Rotary International and many more. The only member-owned utility in Delaware offers some of the lowest electric rates in the Mid-Atlantic, helping businesses grow and helping families keep their costs under control. You'll find DEC employees attending

various community events and they are always happy to chat with members about what they do and how they "Keep the Lights On." Delaware Electric Cooperative is excited about opportunities to expand its array of renewable energy resources, while implementing these changes with the least possible financial impact on the businesses and residents who rely on DEC to provide cost-effective service. The Co-op's future is bright and DEC is confident it will be able to continue to provide sustainable energy to Delawareans for years to come.



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Energy Efficiency: Innovation Through Cost Saving Programs:

Delaware's only electric cooperative must reduce energy and demand 15% by 2015. DEC has aggressively worked to implement a variety of changes to increase the efficiency of the distribution system and offer cost and energy saving programs to member-owners.

Saving Money Through Voltage Reduction:

DEC is working to lower current loss across the electrical system. Engineers have installed new transformers and electronic meters which prevent electricity from being lost. If a typical utility bought 100,000 kWh (kilowatt hours), 10,000 kWh would be lost by the time the energy reached a member's home. Most utilities average an eight to ten percent loss. Because of our hard work, DEC averages a four to five percent current loss across the system. Every percentage point drop in current loss represents a \$1 million savings for the Co-op.

CFL Light Bulbs:

Over the past few years Delaware Electric Cooperative has distributed 142,642 CFL light bulbs to members. The bulbs use up to 75% less energy than incandescent bulbs. By 2015 DEC expects to save 39 million kWh through this program. The member-owned cooperative is also halfway through a three year program to replace 434 roadway lights with energy saving LED lights, which will result in an overall savings of 264,000 kilowatt hours per year.



▲ **142,642 CFL light bulbs have been distributed to DEC members.**



Poultry Light Grant Program:

In May of 2012, DEC launched a LED Poultry Lighting Grant Program to help farmers convert old incandescent and CFL poultry lights to energy efficient LED lights. LED lights use about 80% less energy than traditional poultry lights. Delaware Electric Cooperative offered the bulbs to growers for only \$7 per bulb through the grant program. The high efficiency LEDs usually cost \$35. The Cooperative set aside \$75,000 for the program in 2012, with an additional \$30,000 in funding coming from a grant from the Delaware Energy Efficiency Investment Fund. Farmers who installed the LED bulbs saw an 84 percent reduction in their energy bill. Early results indicate potential savings of more than \$900 per year by installing the LED lights in just one poultry house. This program will likely be offered again.



▲ **More than 3,000 LED lights were offered to farmers. Farmers can save up to \$900 per year per poultry house by installing the energy efficient lights.**

