



Delaware Electric Cooperative Sustainability Report 2017-2018

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 94,000 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. 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.

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, 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

-Natural Gas

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

By October of 2017, Delaware Electric Cooperative will be powering member homes with a cleaner, more sustainable source of electricity. DEC and 10 other not-for-profit utilities are building a state-of-the-art natural-gas-driven power plant in Cecil County, Maryland. The plant, named Wildcat Point Generating Station, will provide affordable power to more than 390,000 homes and businesses on the Delmarva Peninsula and parts of the Mid-Atlantic. Construction on the massive power plant started in 2014, creating 600 temporary jobs. Co-op President and CEO Bill Andrew said once the plant is operational, it should help to stabilize the price of power, not just for DEC members, but consumers across the entire Peninsula. “Our goal is to provide members with affordable and reliable power. The construction of this new power plant will help the Co-op meet that goal, providing an efficient source of power to members for decades,” he said. The new plant is just one of many sources powering homes and businesses in Delaware Electric Cooperative’s service territory. DEC uses a mix of natural gas, solar, landfill gas, coal and nuclear energy to provide power to its 94,000 members. Maintaining a diverse portfolio of energy sources allows the utility to offer members affordable rates, while also minimizing the impact of electrical generation on the environment. DEC lowered electric rates by 5 percent in March — the rates offered by the Co-op are currently the lowest in the state. Rates have actually fallen nearly 7 percent since 2008. While rates can change at any time, DEC members save hundreds of dollars per year on their electric bills when compared to the average rates charged by other utilities.



The new power plant is located in Cecil County, Md.

Affordable and Sustainable

“Wildcat Point will provide Delaware Electric Cooperative members with an affordable, cleaner and more sustainable source of energy for decades to come.”

-Bill Andrew, DEC President and CEO

Cooperative Solar Energy Farm Producing Clean Power

Clean, renewable energy is 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 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. In 2014, DEC also announced a deal to purchase energy produced at the Sandtown Landfill in Kent County, Del., providing enough energy to power 1,000 homes.

Old Dominion Electric Cooperative, DEC's power supplier, is also currently purchasing 30 megawatts of energy produced at two large-scale solar facilities in Virginia. This clean energy is helping to power Delaware homes.



The Bruce A. Henry Solar Energy Farm produces enough energy to power 500 homes.

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 \$4.5 million 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 \$4.5 million in grants for 500 geothermal heating and cooling systems, 927 solar installations, 11 solar hot-water heating systems and 12 small wind turbine projects.


Renewable Projects Installed Since 2006:

Geothermal: 500

Solar: 927

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 thousands of pounds of CO₂ from being released into the atmosphere.

Improving Efficiency Through Innovation

In 2009, the Delaware General Assembly approved legislation requiring utilities to lower energy use and demand 15 percent by 2015. Delaware Electric Cooperative embraced the challenge, implementing a variety of programs which have exceeded the mandate. DEC is the only Delaware utility to meet the mandate.

DEC worked to lower current loss across the electrical system. Engineers installed new transformers and electronic meters that 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.

Over the past few years Delaware Electric Cooperative has distributed 256,000 CFL light bulbs to members. The bulbs use up to 75% less energy than incandescent bulbs. The Cooperative has also replaced 558 roadway lights with energy saving LED lights, which last nearly three times as long as traditional highway lights. DEC has also started offering efficient LED parking lot lighting and LED area lights – with more than 1,500 of the lights having been installed.

In 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 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. Farmers who installed the LED bulbs saw an 84 percent reduction in their energy bills. Nearly 20,000 poultry LED bulbs have been installed in poultry houses.

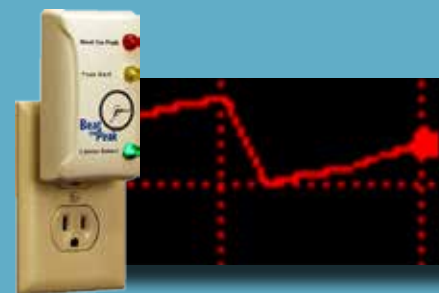
Additional energy savings have come from the installation of heat pump water heaters, solar water heaters, solar and wind systems, and geothermal heat pumps, which qualify members for a DEC grant.

Our Beat the Peak program, which asks members to voluntarily conserve energy has saved members \$24 million since 2008. Our Switch and Save program, when used in conjunction with Beat the Peak, has also resulted in energy savings. Through the program, members are given a \$2 monthly billing credit for each air conditioning unit and water heater they allow us to control during peak energy times. These initiatives have resulted in total energy savings of 331 million kWh. DEC's efforts to improve its electrical system and increase efficiency have prevented 349 million pounds of carbon dioxide from being released into the air since 2009. That's the equivalent of taking 14,544 cars off the road, removing 21,000 tons of waste from landfills or planting 1.7 million trees.



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 54,000 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 works hard to keep members informed.

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 on how 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-hours. 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:

Co-op members save nearly \$270 a year on their electric bills when compared to the average cost of electric service with other Delaware energy providers.

Average Yearly Energy Costs



For more than one decade, DEC crews have helped provide habitat for ospreys living along Delaware's coast. Crews installed 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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