Delaware Electric Cooperative Clean Energy Plan



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"We believe now is the right time to implement a Clean Energy Plan for our members, for our Cooperative, and for Delaware. Delaware Electric Cooperative has always been a leader in renewable energy and environmental sustainability. As we plan for the future, it is our responsibility to continue to be a leader in the development and use of sustainable, reliable, resilient and affordable programs that reduce our carbon intensity."



DEC's Bruce Henry Solar Farm

Statement on Clean Energy

Clean energy means many things in today's energy environment. At Delaware Electric Cooperative (DEC), we believe clean energy includes any means or method of generating, saving, displacing, storing, or using energy that allows (DEC) and our members to reduce our carbon emissions.

DEC's target is to reduce the carbon intensity of the electricity used by our members by 50% by 2025 and a goal of 75% by 2050 compared to 2005 levels. This plan outlines how the programs and policies that have directly facilitated DEC's carbon reductions in the past, and how we will continue to achieve carbon reductions in the future. Additionally, we continue to evaluate the impacts of other beneficial electrification programs and how they reduce carbon dioxide emissions and the carbon intensity of our energy portfolio and, therefore, benefit our members and all of Delaware. DEC purchases at least 95% of our energy from Old Dominion Electric Cooperative (ODEC), by contract. DEC is an owner-member of ODEC and has worked with them as our energy supplier to assure that our energy portfolio reflects the goals of this Clean Energy Plan in a way that is sustainable, affordable and achievable. All of the energy DEC directly procures is and will continue to be 100% renewable and locally sourced, and our members receive the benefits of this carbon-free generation and our investment here in Delaware.

WE BELIEVE CLEAN ENERGY INCLUDES:



Renewable generation such as utility owned and member owned solar, wind, landfill gas and hydro generation.



Energy efficiency measures that improve the efficiency and utilizations of motors, appliances, lighting, distribution systems or technology like variable frequency drive alternate current to direct current conversions.



Battery Storage systems that store renewable energy and allow it to be used at times of peak demand.



Beneficial electrification such as electric vehicles, diesel irrigation conversions and other shifts from direct fossil fuel use to electricity that reduce overall emissions.



Technology and smart grid deployments to reduce demand, manage power plant generation, and control appliances.



Replacing older, carbon-intense resources like coal with new and more efficient generation technologies like combined-cycle combustion turbines powered by natural gas and carbon-free nuclear.



Member education and programs that allow everyone to contribute to clean energy.



Reliability and resiliency investments that keep higher emitting sources off-line.



Beat the Peak[™] and other demand side management programs to reduce peak usage when electricity costs the most and higher carbon power plants are in use.



Continued evaluation of new and cleaner technologies.



Target and Goal

DEC has made significant investments in renewable energy and energy efficiency programs that benefit the community we serve and save our members money. DEC is the only electric utility to meet Delaware's 15% energy savings mandate in the Energy Efficiency Resource Standards Act. Our nationally recognized Beat the Peak Program[™], which directly engages members to reduce their energy usage at times when electricity costs the most. has saved members more than \$32 million since its creation and been copied by more than 100 electric utilities nationwide. DEC also developed and owns the largest utility-owned solar facility in Delaware, the 7 MW Bruce A. Henry solar farm in Sussex County, and participates with ODEC in the ownership of approximately 263 MW of wind energy and more than 105 MW of solar generation. DEC also offers its members a community solar program, net metering and grants for memberowned solar systems, programmable thermostat and Electric Vehicle rebate programs, as well as grants to help farmers convert diesel irrigation generators to electricity.

The success of our energy efficiency, renewable energy, and electrification programs to date has shown that DEC can reduce its overall carbon intensity without causing significant cost impacts for our members. DEC's electric distribution rates are lower today than they were in 2008. We support the goal of continuing to transition to the cleanest options for Delaware, and have learned through our programs that measuring our carbon intensity (carbon intensity = CO_2 per MWh of the electricity used by our members) is the correct metric for measuring our progress and our clean energy goals. We believe the target of a reduction of 50% carbon intensity by 2025 as compared to 2005 is aggressive but achievable.

We have already reduced our carbon intensity by over 40% and through new solar, both utility scale and member-owned, improved carbon intensity of the electricity purchased from our supplier ODEC, and continuing to identify new ways to innovate. DEC's target is to achieve a 50% reduction of our carbon intensity by 2025 and a goal of a 75% reduction by 2050. By prioritizing programs which reduce DEC's overall carbon emission, we can make decisions and implement programs that best meet the needs of our members, both financially and environmentally, while achieving the goals reflected in this Plan.



CO₂ Emissions and Intensity

Since 2005, the number of customers served by Delaware Electric Cooperative increased by 41%

Efforts to Date

Since 2005. DEC has achieved a reduction of over 40% CO, per MWh used by our members. Because we purchase at least 95% of our electricity from ODEC, they have also contributed significantly to our improvement. DEC's improvements in carbon intensity have been realized through multiple programs for our members, including: customerowned solar systems which allow for net metering, which is growing by approximately 19% per year; investments in community solar and in utilityscale solar facilities through power purchase agreements; developing and recently doubling the size and capacity (to 7 MW) of DEC's solar farm; and investments in renewable landfill gas. As always, DEC's programs are locally focused, and all of our energy investments are 100% renewable. DEC currently has in excess of 27 MW of solar integrated into its electric system.

Just as DEC has improved its carbon intensity since 2005, ODEC has similarly improved. Below is a summary of ODEC's resource mix over time. As reflected in the pie charts, coal usage has been significantly curtailed and renewables have grown as a percentage of the ODEC's portfolio. Additionally, ODEC constructed and brought online the Wildcat Point facility in 2018, its largest (1000 MW) and cleanest gas-fired facility. Finally, ODEC purchases approximately 40% of its power from the PJM market. PJM is the regional transmission organization and manages the wholesale electricity market in 13 states and the District of Columbia, including Delaware. The transition away from coal to renewables and cleaner natural gas generation throughout the PJM territory has also helped ODEC reduce its overall carbon intensity.

As DEC's energy generation mix has become cleaner, DEC has also reduced its carbon intensity through energy efficiency and beneficial electrification programs that lower emissions and save our member's money. On the next page is a summary of the energy efficiency and electrification programs DEC has implemented for members. Our commitment to sustainability is demonstrated through the scope of programs offered for our members and the financial support DEC has provided for these programs. Since 2005, DEC has invested more than \$20 million in our programs to improve our members' carbon intensity while maintaining affordable rates and reliable electric service.



ODEC Power Supply Resources

DEC'S DIESEL IRRIGATION ENGINE REPLACEMENT PROGRAM is an example of a beneficial electrification program. DEC provides Delaware farmers with an incentive to replace dirty, inefficient irrigation engines with cleaner, more efficient electric motors. The results of the program are significant and provide a template for the types of programs DEC will continue to implement. Using estimates developed by the NRECA (National Rural Electric Cooperative Association), our diesel irrigation replacement program has eliminated more than 25,000,000 kg of CO₂ emissions since its inception in 2011. Put another way, the program has had the impact of keeping almost 6,000 cars off the road for one year.

DEC Clean Energy Programs

Beat the Peak Program™	 Thermostats EV Chargers Residential Charger Grant Commercial charging infrastructure cost share
Residential Load Control	• EV • Water Heaters • AC
Commercial Load Control	 Poultry Irrigation Variable Frequency Drive (VFD) – Irrigation
Low Income Weatherization	Partnership with DNREC
Home Performance with Energy Star – Home Energy Audit Program	 Partnership with Delaware Sustainable Energy Utility (DESEU)
Renewable Resource Grant Program	SolarGeothermalWind
Commercial LED Lighting Grant Program	Cost and energy saving
Heat Pump Water Heater Grant Program	Beneficial electrification
Educational Materials through Questline	 Business Energy News Residential Guidance Material Newsletter Social Media Email
Member Billing Insights	Home Energy SuiteHome Energy Calculators



Path Forward

DEC's path forward to achieve a 50% reduction of its carbon intensity by 2025 target builds on the programs DEC has implemented to date as well as identifying additional, new opportunities to improve carbon performance.

DEC has signed an agreement purchase the energy and capacity generated by a new 1.5 MW solar facility scheduled to become operational in early 2021. As DEC has the ability to directly procure up to 5% of its total supply, DEC continually evaluates opportunities to add Delaware-based renewable generation.

ODEC has also committed to several initiatives which will reduce our carbon intensity. Specifically, ODEC has contracted to purchase the energy from a 75 MW solar facility in Virginia (expected to be operational in 2022) and has entered a partnership to develop solar facilities within its members' service territories. The expectation is for 10 to 15 separate distributed solar projects totaling at least 60 MW with a completion date of year-end 2021. Two of the projects, totaling 7.5 MW, will be located in the DEC service territory. ODEC also continues to evaluate additional opportunities for strategic electrification within their service territory, to improve reliability, better manage and reduce outages, utilize the most effective technology and transformers, and look for any other operational means to reduce carbon intensity. DEC will also continue efforts to improve performance and increase energy efficiency in our operations or within our system through solutions like Volt/VAR optimization (VVO) and self healing operational systems.

Conclusion

DEC's commitment to achieve a 50% reduction of its carbon intensity by 2025, and a 75% reduction by 2050, represents a significant commitment that assures DEC remains a national leader in the development and use of clean energy and sustainability programs. DEC has achieved stateled initiatives like the Energy Efficiency Resource Standards and the current Renewable Energy Portfolio Standards, but we recognize the need to go further on behalf of our members and our community. DEC has shown through the programs it has implemented that significant reductions in the carbon intensity of our energy supply can be achieved without causing rate increases for our members. As we move forward, DEC will continue to pair renewable energy investments with energy efficiency programs and member engagement initiatives that best align the goals of this Plan with the need to assure the energy DEC provides is affordable, reliable, and sustainable for our members.

We will be tracking our performance and holding ourselves accountable to the results, just as we will continue to work as a member of ODEC to maintain the positive course they have charted. We will review our performance and our plan annually and adjust as needed. Our members expect and deserve nothing less.



Net Meter Installations (Rooftop Solar Installations) Interconnected to DEC

(Nov. 2020)

About Delaware Electric Cooperative (DEC)

Delaware Electric Cooperative (DEC) was founded by a group of farmers in 1936 to bring the lifechanging benefits of electricity to rural Delaware. Farms that once sat dark at night were suddenly illuminated and the lives of thousands of Kent and Sussex County residents were changed forever.

Delaware Electric Cooperative has transformed itself from a small, rural electric provider back in the 1930s, to a nationally recognized utility with a reputation for innovation.

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. Economics and technology are the new drivers for a cleaner, more resilient electrical system. Cooperative leaders are dedicated to reducing energy impacts 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.

