Sustainability Leaders

Conserving.
Preserving.
Partnering.
Protecting.

PWC
Fayetteville's
HOMETOWN UTILITY

The Fayetteville Public Works Commission is Fayetteville's Hometown Utility – providing our community with the benefits and resources of a locally owned/operated municipal utility and providing reliable, safe and affordable electric and water services. We have a long history of sustainable practices. We understand the impact our operations and the consumption of utilities have on our region's natural resources.

We're committed to sustainability in all aspects of our operations, demonstrating our support for conserving natural resources, improving our air and water quality, and expanding the use of renewable energy. We seek to continually improve our sustainable practices and deliver programs to help customers conserve as well as programs that enable us to preserve resources and habitat in the region in which we operate and serve.

This report is prepared to highlight our commitment to sustainability and the many areas we positively impact. For information about specific practices or initiatives, please send request to info@faypwc.com.

Recognition

We are proud to share that we have received the following awards and designations for our efforts and achievements in promoting sustainability and environmental stewardship.

SMART ENERGY PROVIDER
American Public Power Association

American Public Power Association's Smart Energy Provider Award (2019) – received for our commitment to and proficiency in energy efficiency, distributed generation, and environmental initiatives that support the goal of providing low-cost, quality, safe, and reliable electric service.

American Public Power Association's Energy Innovator Award (2010, 2012, 2019) – recognizes utilities for creative, energy-efficient techniques or technologies that help provide better service to electric customers and/or increase the efficiency of operations and resources. In 2019, we received the award for developing an innovative way to locate electric faults, which allows us to limit the duration of power outages and reduce call-outs.

Cleantech Innovation Award (2020) – awarded by the Research Triangle Cleantech Cluster for the PWC Community Solar and Battery Storage project, in recognition of this significant effort to promote and accelerate the green technology economy.

Public Power Award of Excellence for Energy Efficiency (2009 - 2015) presented by ElectriCities of NC for efforts to increase energy efficiency and education. We have received this award in recognition of PWC initiatives that include converting area streetlights to LEDs, as well as our customer incentive programs and consumer education to promote conservation.

Walk the Walk Green Awareness Award (2018) – received from Sustainable Sandhills for a wide range of PWC initiatives that include: partnerships with community organizations to promote green awareness and sustainability; promoting environmental awareness through participation in many local events; promoting conservation and offering customer incentive programs to reduce energy and water consumption.

Green Business Platinum Award (2016) – received from Sustainable Sandhills for going "above and beyond" with sustainability practices in facilities management as part of our Green Business Program.

North Carolina Smart Fleet Champion (2015) – presented by the North Carolina Clean Cities Coalition. Champion is the award's highest-level designation, given to PWC in recognition of our efforts to reduce transportation related emissions and increase fleet efficiency.

Innovation

Advanced Metering Infrastructure: PWC completed our Advanced Metering Infrastructure (AMI) program in 2017 with the installation of more than 180,000 advanced electric and water meters. AMI technology is providing many environmental benefits. Because advanced meters can be read and monitored remotely, they have significantly reduced the vehicle traffic (and emissions) required for service calls. The new meters give customers more access to information that allows them to better manage their energy usage, which is particularly helpful for saving energy during Time-of-Use peak hours. Through our water leak detection program, made possible by meter "alerts" (for unusually high usage), we can identify potential leaks and alert customers to fix them. In 2020, identifying 21,000 potential leaks saved 22 million gallons of water.

LED Street Lighting: Since 2015, PWC has replaced over 36,000 lights as part of our system-wide street light conversion to LED lighting. LEDs have a longer life and use less energy than traditional street lights, and they help us meet North Carolina mandates for renewable energy (Senate Bill 3). Installed LED lights have already resulted in a savings of 5.82 million kWh of electricity.

Decades of Progress for a Sustainable Future

1987

*Began Recycling "stabilized" **Biosolids** from our water reclamation facilities as fertilizer on Cumberland County farm lands, now including a 750-acre PWC farm*

*Plans initiated to improve efficiency and our environmental impact by consolidating non-plant facilities/ operations at a **Centralized Complex***

1990

*Initiated our **Watershed Preservation/Wetland Restoration** efforts to enhance water and air quality, and preserve forested lands, around our water-supply watershed areas*

1997

*The PWC-sponsored **WaterWise Garden** exhibit opened at Cape Fear Botanical Garden, demonstrating techniques for landscaping that requires minimal watering*

Emissions Reduction

Fleet Management: Through our fleet management department, we have established a preventive maintenance program to provide clean burning engines/fluids. In addition, we implemented a program to aid in minimizing emissions, including reducing vehicle idling. As part of our ongoing replacement program for lower emission vehicles, 69% of our large diesel trucks are now lower emission units. In FY2021, we will downsize/replace existing vehicles for PWC Utility Field Services with more efficient/smaller trucks.

Alternate Fuels/Hybrid Vehicles: PWC continues to add hybrid vehicles (Ford Escape, Chevy Malibu, hybrid bucket trucks) to our fleet, and we're replacing aging vehicles and equipment with lower emission diesel engines and zero emission equipment. In FY2017, we added an all-electric Chevy Volt sedan.

Plug-in nc: PWC is a proud member of this organization that promotes electric driving statewide and helps stakeholders with the seamless integration of electric vehicles into our communities.

Electric Vehicle Charging Stations: With the help of a $37,000 grant from the NC Green Technology Center, PWC has installed four Level 2 Dual Electric Vehicle Charging stations in strategic public locations throughout our service area. The stations are open to the public, currently free of charge. Since their installation in December 2015, they have provided more than 7,000 charges (providing more than 46 mWh of electricity), accounting for an environmental savings of nearly 20,000 metric tons of greenhouse gases.

Service Call Reduction through Technology Upgrades: Since the installation of advanced utility meters, we have reduced the number of truck rolls (situations that require a technician to be dispatched to a customer's location) for meter service by an average of 27,300 a year. Our annual mileage has been reduced by 230,000 miles. Thanks to advanced meter installation, we have also reduced our PWC fleet by seven vehicles, and the average life of our trucks has increased from 6 to 8 years. With the conversion to LED streetlights, service calls/truck rolls associated with streetlight repairs have decreased by 25% a year.

Ozone Advance: We are partnering with local government agencies, other organizations and the Environmental Protection Agency in the Ozone Advance Action Plan for Cumberland County. This county-wide collaborative effort to reduce emissions is helping Cumberland County continue to meet the National Ambient Air Quality Standards for ground-level ozone.

1998

*Launched the **PWC Good Cents Housing** program, collaborating with builders, to promote energy efficient homes*

1999

*Began billing at **Tiered Water Rates,** rewarding customers for using less water because rates are lower in lower usage tiers*

2000-01

*Hired a full-time **Arborist** to oversee and monitor the environmental impact of tree pruning/removal necessary for safety and access to our power lines*

Energy and Water Conservation

Time-of-Use Electric Rates: PWC residential and small commercial electric customers are billed on a mandatory Time-of-Use (TOU) rate schedule. Charging higher rates during Peak consumption times – and significantly lower rates during Off-Peak hours – gives customers a powerful incentive to reduce their energy consumption during busy peak times. This helps customers save money, while increasing our energy security (helping avoid the need for additional energy generation) and reducing pollution during those typically higher-use hours. In just the first year, TOU rates reduced our peak electric demand by 1.7%.

Commercial Customer Support: PWC serves a diversified commercial and industrial customer base. Our Customer Programs Division works one-on-one with these customers to address their energy consumption concerns. We focus on ways they can improve energy efficiency as it relates to their unique operational demands.

Home Efficiency Audit Program: Through our Home Efficiency Audit Program (HEAP), customers can have a comprehensive home efficiency check-up. Performed by a PWC Certified Home Efficiency Rating Specialist, the audit shows homeowners where they are losing or wasting energy (and water) and provides them with recommendations for ways to reduce power and water consumption. They can earn bill credits for implementing audit recommendations.

Incentive Programs: In addition to HEAP, PWC offers incentive programs that give residential customers bill credits for taking steps that will help them save money, while conserving power and/or water for years to come. Our current programs include: programmable (Wi-Fi-connected) thermostat, insulation, ductwork, refrigerator, clothes washer, dryer, dishwasher, HVAC system, LED lighting, LED seasonal lighting, and lawn irrigation/rain sensor. In FY2020, these programs saved 388,000 kWh of electricity and 709,648 gallons of water. Since 2015, our customers have saved an estimated 6.2 million kWh of electricity and 6.7 million gallons of water, thanks to PWC incentives.

2004

*Joined the **NC GreenPower** initiative, allowing PWC customers to purchase "blocks" of renewable-sourced electricity that is added to our state's power grid*

2007

*Introduced our multi-faceted **"Stop. Think. Conserve"** informational campaign encouraging and educating customers on ways to save power and water*

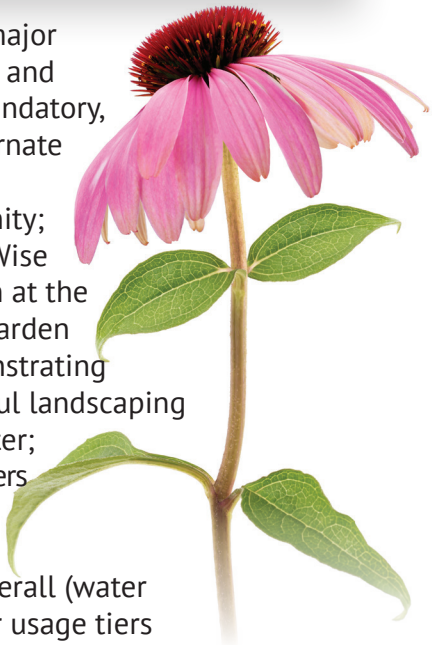
*Partnered with Methodist University to support their **Bio-Retention Ponds** that help with flood control and pollutant removal from stormwater runoff*

*Added the first **Hybrid vehicle** (Ford Escape) to our fleet*

Public Education & Outreach: Promoting conservation and environmental stewardship is a vital, year-round initiative for PWC through a variety of consumer education and outreach efforts. Our continuous communication and informational campaigns include PWC's annual Conservation Calendar, distributed to 20,000 people in FY2020. In addition, we host the annual PWC (Power & Water Conservation) Expo.

Energy Conservation: We provide numerous tools to customers to promote energy efficiency and conservation. The PWC Power Tools campaign consolidates information on all the ways customers can save electricity (and lower their bills). We continuously remind customers – especially as Time-of-Use schedules change for winter and summer hours – to use more power during Off-Peak hours and save during peak times. We also distribute more than 1,000 free LED bulbs annually.

Water Conservation: Our major efforts include: establishing and communicating the now-mandatory, year-round ODD-EVEN (alternate day) schedule for outdoor watering in our community; promoting the Water Wise Demonstration Garden at the Cape Fear Botanical Garden as a public tool demonstrating techniques for beautiful landscaping that requires little water; and billing PWC water customers at tiered rates, designed to reward customers who use less water overall (water used in lower usage tiers is billed at lower rates – higher usage tiers have higher rates).



2008

*Launched our comprehensive **Internal Recycling program,** which reduced solid waste pickups by 33% in its first year*

***ODD-EVEN outdoor watering** (alternate day schedule) – to save water and avoid the need to expand our treatment capacity – became mandatory for our community*

*Became a member of the **Sustainable Sandhills Green Business** program, demonstrating our commitment to minimize the environmental impact of our operations*

Conservation/Facilities Management

Operations Complex: PWC operating and administrative functions are consolidated at our 65-acre centralized complex. Centralizing non-plant facilities has improved the efficiency and effectiveness of our operations in many areas, including personnel requirements, equipment utilization, materials management, information flow, customer service, security and control of operations. We completed a retro-commissioning project (replacement lighting, energy improvements to heating, ventilation and AC systems) in our main operations facility/building, which was built in 1998. This project, which reduced our energy consumption by 33%, also included an upgraded automation system to improve the operating efficiency of our chiller plant and reduce air handling unit run times.

LEED Customer Service Center: PWC built one of the first LEED (Leadership in Energy & Environmental Design) Certified buildings in Fayetteville. Our Gold-level LEED-certified Customer Service Center, which opened on the PWC Campus in November 2009, meets 25 LEED standards for the design, construction and operation of high performance green buildings.

Green Business Program: A proud member of the Sustainable Sandhills Green Business Program, we continually maintain our Green Business Certification by following our plans to reduce solid waste, CO_2 emissions and our overall energy and water use.

Butler-Warner Generation Plant: To improve the environmental impact of our power generation plant, we installed fuel nozzles that can reduce the plant's NOx emission rate by 40%. The project also included an upgraded water injection system to provide an adequate water supply for effective use of the new nozzles.

Water Wise Landscaping: At all PWC properties, our landscaping is planned/designed with vegetation and techniques that minimize the need for watering.

2009

*Opened the **PWC Customer Service Center,** one of the first **LEED** (Leadership in Energy and Environmental Design) **Certified** buildings in Fayetteville*

$martWorks

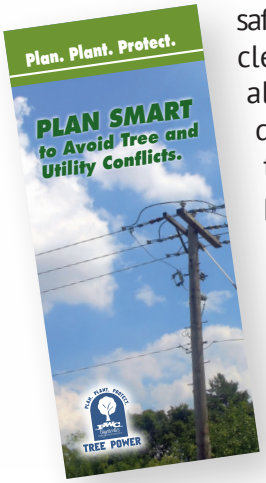
*Adopted **$mart Works Program,** which allowed customers to use two-way communication/control devices to manage energy usage, helping us meet NC Renewable Energy mandates*

2010

*Received our first **APPA Energy Innovator Award** for our creative efforts to help customers save energy through the $mart Works program*

Land Management

Tree Power: A grant from the NC Forest Service's Urban and Community Forestry program helped us launch the PWC Tree Power public outreach and tree education initiative in 2015. As part of this program, we sponsored tree plantings at two local high schools and distributed 1,000 tree seedlings to customers. For our Line Clearance program, we employ a certified arborist to manage these activities, which include pruning or removing trees and undesired vegetation from rights-of-way near overhead power lines to ensure safe conductor-to-tree clearances. We are also looking into development of a tree replacement program whereby we would partner with customers to replace trees that have to be removed because they interfere with power lines.



Watershed Program: A number of initiatives allow us to preserve/enhance water and air quality in watershed areas where we obtain our customers' water supply. To preserve both water quality and biological integrity, PWC manages the property we own around our water supply lakes. We have also purchased a significant amount of

forested land in the Little Cross Creek watershed. While the primary objective of this purchase is to preserve vegetative buffers around our water supply lakes, an added benefit is the preservation of almost 3,000 acres of forested land in the center of urbanized Fayetteville.

In addition to protecting water quality, PWC's Watershed program restores and enhances the longleaf pine ecosystem for wildlife habitat. The Bonnie Doone Lake natural area contains a 262-acre old-growth longleaf pine stand, the oldest remaining stand in North Carolina and one of less than a dozen enduring in the Southeast. Recent projects include timber stand improvement on 47 acres and the first prescribed burn in more than ten years. These actions contribute to restoring the open forest aspect and have welcomed the first red-cockaded woodpeckers to the property in over four decades. Bonnie Doone is host to characteristic Sandhills flora and fauna and was registered as a NC Natural Heritage area in 1990. Some longleaf pines on the watershed are believed to date back to 1770.

2011

Be "Lean and Green" with eBill

*Added the environmentally-friendly **eBill** (electronic billing) option, which quickly became popular with our customers and reduced waste from paper bills*

*Initiated plans for funding our **Renewable Energy Portfolio** that will offset expenses related to meeting the NC mandate for renewable energy*

*Added first **Hybrid Bucket Truck** to the PWC fleet*

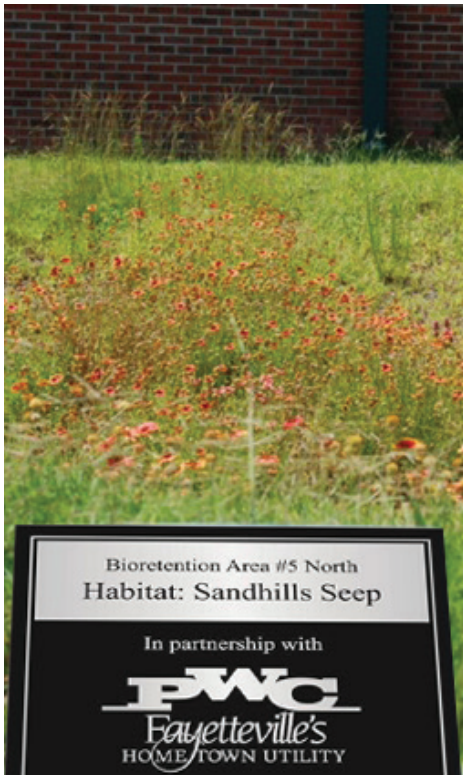
*Our Customer Service Center achieved **Gold-level LEED Certification** for meeting the highest standards for green building performance*

Wetland Restoration: PWC has created and enhanced wetland areas in the Little Cross Creek watershed. One project restored a wetland area – an old farm pond where the dam had breached and the area became infested with invasive plant species – by planting native vegetation that will absorb pollutants before the water enters Mintz Pond. This project also includes walking trails, educational signage, and a boardwalk over the wetland for educational activities.

Fountainhead Spring Park: We created this park to preserve the history of Fountainhead Spring, one of Fayetteville's original water sources. In 2005, when the area surrounding the spring was being developed for condominiums, we acquired part of the spring site (and the 'well') so it could be preserved and incorporated into a small urban park alongside Fountainhead Lane.

Community Partnerships & Projects: PWC partners with numerous community organizations in initiatives that promote air quality, recycling, conservation and beautification. PWC has also supported bio-retention ponds at Methodist University and the 4.5-acre Hope VI community garden.

Grinding of the Greens: Since 1994, PWC has coordinated the annual Grinding of the Green Christmas Tree Recycling program. Hundreds of thousands of trees have been turned into mulch for area parks and saved valuable landfill space.



TREE POWER

2013

*Began installing **LED Street Lights,** launching our overall plan to reduce energy usage and improve safety/lighting quality by converting all area street lights to LEDs*

2015

*Installed four **Electric Vehicle Charging Stations** throughout our community, making free PEV (plug-in vehicle) charging available to the public*

*Initiated the **PWC Tree Power** program, promoting the positive environmental impact of planting and protecting trees, especially in urban areas*

*Held our inaugural annual **Power & Water Conservation Expo** (free to the public), providing valuable information, hands-on demonstrations and "green" giveaways*

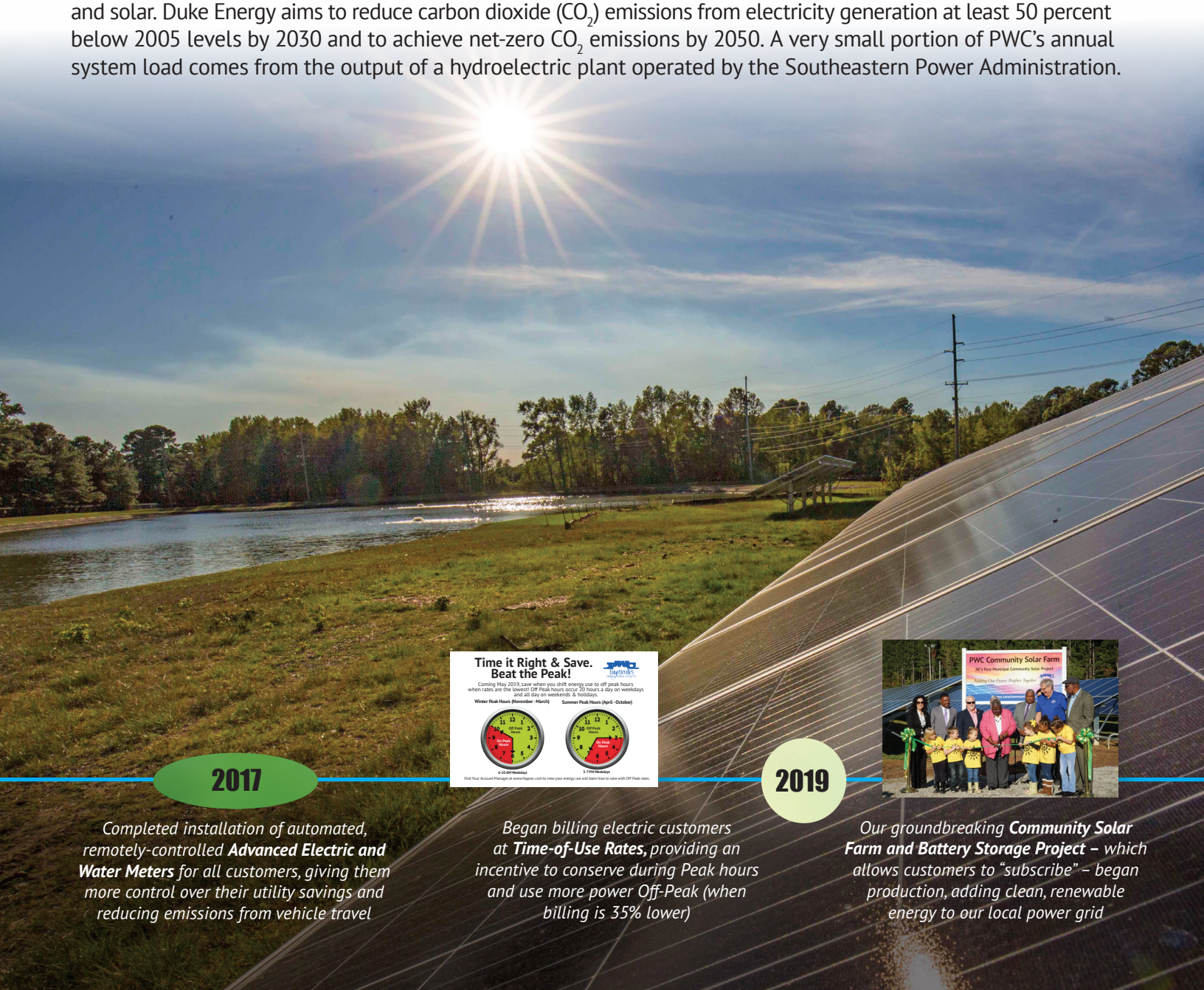
Renewable Energy

Community Solar: Working with North Carolina State University's Clean Energy Technology Center, PWC has built a 1 MW Community Solar Farm with 500 kW battery storage. It is North Carolina's first solar plant of its kind built by a municipal utility, and it began energy production in the fall of 2019. PWC electric customers can participate, as subscribers to the program, and help us add renewable, zero-carbon-emission energy to our local grid. Subscribers earn bill credits for the energy produced by the solar panels they support.

NC Renewable Energy Mandates: Under NC Senate Bill 3, since 2018, 10% of all PWC's retail energy sales must come from renewable resources. PWC works to comply with the mandate through a variety of programs, including the implementation of Advanced Metering technology, system-wide conversion to LED streetlights, and community solar projects.

Energy Partners

Annually, PWC purchases over 2 million megawatt hours to serve our customers. Almost all the energy we use comes from Duke Energy, our wholesale power supplier. Duke Energy has a diverse, increasingly clean generation portfolio. Almost 40 percent of the electricity generated in 2019 was from carbon-free sources, including nuclear, wind, hydro and solar. Duke Energy aims to reduce carbon dioxide (CO_2) emissions from electricity generation at least 50 percent below 2005 levels by 2030 and to achieve net-zero CO_2 emissions by 2050. A very small portion of PWC's annual system load comes from the output of a hydroelectric plant operated by the Southeastern Power Administration.



2017

*Completed installation of automated, remotely-controlled **Advanced Electric and Water Meters** for all customers, giving them more control over their utility savings and reducing emissions from vehicle travel*

*Began billing electric customers at **Time-of-Use Rates,** providing an incentive to conserve during Peak hours and use more power Off-Peak (when billing is 35% lower)*

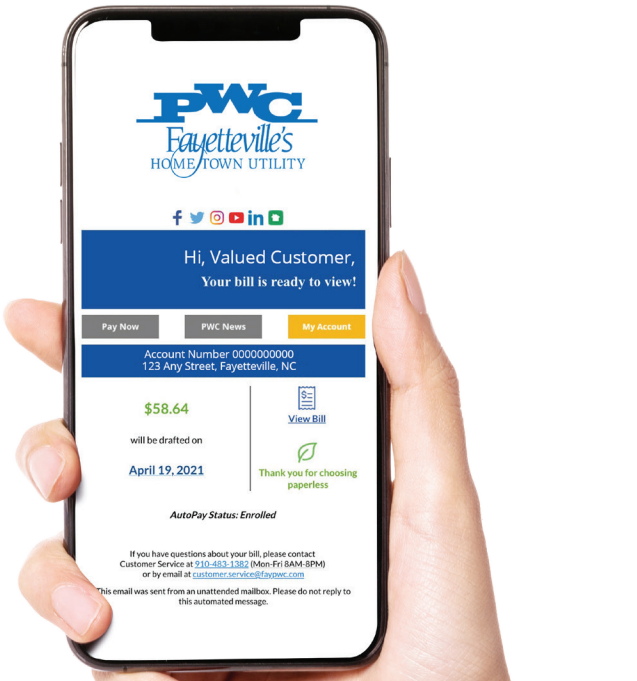
2019

*Our groundbreaking **Community Solar Farm and Battery Storage Project –** which allows customers to "subscribe" – began production, adding clean, renewable energy to our local power grid*

Waste Reduction

eBilling: Since 2011, PWC has made electronic billing available, and "eBill" has become a popular option for our customers. The reduction in paper billing has had a significant environmental impact.

Biosolid Recycling: Recycling biosolids from the PWC water reclamation facilities has been part of our waste reduction since 1987. Under a state-monitored Land Application Program, PWC-recycled biosolids are at work on more than 4,100 acres of Cumberland County farmland, including the 750-acre PWC farm in the eastern part of the county.



Recycling: Under our internal recycling program, which began in 2008, our employees recycle newspaper, magazines, catalogs, aluminum cans, plastic bottles and office paper. Because the majority of office waste is recyclable, trash containers at employee workstations have been converted to recycling containers. All other trash is disposed of in existing common area trash cans.

Operational Initiatives: In all areas of PWC operations, we utilize sustainable practices that include: special programs to recycle scrap metals and electronics; paperless office procedures and initiatives; and compliance with hazardous/environmental waste.

SMART ENERGY PROVIDER
American Public Power Association

2019

*Received the APPA's **Smart Energy Provider Award** for our achievements in energy-efficiency and sustainability, while providing quality, reliable electric service*

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