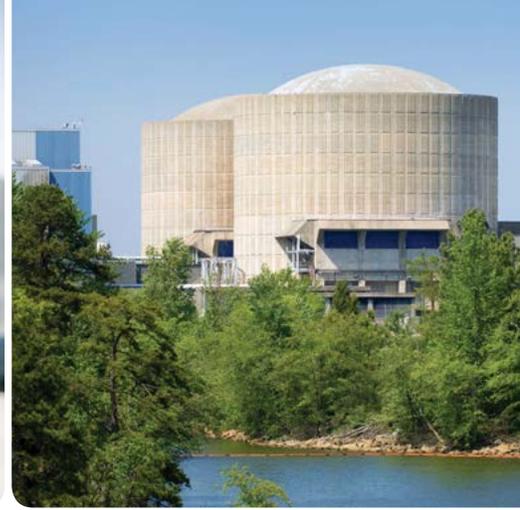


3

OPERATIONS

Excel in Safety, Operational Performance and Environmental Stewardship





OPERATIONS

2018 HIGHLIGHTS

- Maintained industry leading safety performance with a Total Incident Case Rate (TICR) of 0.43.
- Since 2005, decreased carbon dioxide (CO₂) emissions by 31 percent, sulfur dioxide emissions by 96 percent and nitrogen oxides emissions by 74 percent.
- Achieved a nuclear capacity factor of 93 percent; it was the 20th consecutive year the fleet capacity factor exceeded 90 percent.
- Retrofitted two coal units at our Rogers Energy Complex, enabling it to reduce CO₂ emissions by burning a combination of natural gas and coal – rather than coal only.
- Reduced water withdrawn for electric generation more than 15 percent since 2011.
- Recycled 79 percent of our solid waste, diverting approximately 82,000 tons of solid waste from landfills.

CHALLENGES AND OPPORTUNITIES

- Maintain industry leading safety performance and continue to focus on the prevention of serious injuries to our employees and contractors.
- Continue to demonstrate our commitment to operational excellence, which is a foundation to any success we achieve.
- Strengthen the grid against cyber and physical threats through our grid modernization programs.
- Move to a lower-carbon future by reducing our CO₂ emissions by 40 percent from 2005 levels by 2030.



| Duke Energy's Renewable Control Center monitors wind and solar facilities nationwide.

Control Center Helps Grow Renewable Energy

Duke Energy Renewables, the company's unregulated renewables business unit, not only produces wind, solar and battery storage power, it also keeps an eye on it, too.

Its Renewable Control Center (RCC) in Charlotte, North Carolina, uses technology and data to monitor and control energy across the United States.

A total of 30 employees monitor wind, solar and battery storage facilities all day and all night, from coast to coast, and direct 5,000 megawatts of energy to light cities and towns from North Carolina to California.

Some of that energy comes from power plants and facilities owned by other companies. That includes the nation's first offshore wind farm 3 miles off the coast of Rhode Island. Overall, the center oversees enough power to provide electricity to 1 million homes.

The center started in 2009 with a manager and one operator per shift. Ten years later, employees monitor more than 90 wind, solar and battery sites. For smaller companies, hiring Duke Energy Renewables allows them to afford more renewable energy without investing in a high-tech facility of their own.

The RCC uses weather data from Duke Energy meteorologists to predict how much renewable energy can be produced each hour and potentially in the days ahead. The more accurate their predictions are, the more valuable the forecast is for energy buyers. Here are some of the ways the center uses technology to increase renewable energy production and keep employees safe.

- It starts, stops and resets wind turbines and solar inverters to maximize availability and keep technicians safe. The center also adjusts solar panels to reduce damage during high winds and severe weather. In addition to monitoring individual plant components, operators look at the plant's performance and output to make sure it is producing as much power as possible.
- The technology alerts operators to equipment malfunctions, which in some cases can be repaired remotely in minutes. When repairs require in-person assistance, employees in Charlotte will dispatch the nearest technician.
- In addition to the six monitors at their desks, employees use eight television-size screens mounted on the wall to watch more systems – including weather, site cameras and substation components.



CONSTANT MONITORING

Employees monitor more than 90 wind, solar and battery sites all day and all night.

SAFETY PERFORMANCE METRICS

	2014	2015	2016	2017	2018 ¹
Employee and contractor work-related fatalities	4	5	0	2	3
Employee Total Incident Case Rate (TICR) ^{2,3}	0.58	0.41	0.40	0.36	0.43 ⁴
Employee Lost Workday Case Rate (LWCR) ^{2,5}	0.17	0.18	0.15	0.15	0.15
Contractor Total Incident Case Rate (TICR) ³	1.05	1.18	0.87	0.80	0.74
Contractor Lost Workday Case Rate (LWCR) ⁵	0.28	0.21	0.15	0.10	0.11

1 2018 is the first year that Piedmont Natural Gas results are included.

2 Includes both employees and workforce augmentation contractors.

3 Number of recordable incidents per 100 workers (based on OSHA criteria). Top decile in 2017 for employee TICR was 0.42 (Edison Electric Institute survey for companies with more than 7,000 employees).

4 TICR excluding Natural Gas Business Unit is 0.34.

5 Number of lost workdays per 100 workers.

Striving for a Safer Workplace

Duke Energy is committed to the health and safety of its workforce and communities. Putting safety first not only enhances quality of life but contributes to the company's business success.

In 2018, our employees delivered strong safety results, consistent with our industry-leading performance from previous years. However, we fell short of our aggressive target for our total incident case rate.

To help drive improvement, the company focused on injury prevention through two campaigns, including a summer program aimed at reducing heat-related illness and insect bites. The second campaign focused on reducing line-of-fire injuries caused by sharp, moving and low-hanging objects striking workers.

In addition to delivering results in business-as-usual situations, Duke Energy employees exceeded expectations under adverse weather conditions. The company safely and efficiently restored power to millions of customers after two catastrophic hurricanes impacted our territory during 2018.

Despite an improving safety trend, there is still work to be done. Duke Energy experienced three work-related fatalities and one life-altering injury in 2018. Reducing the number of serious injuries will be a focus for Duke Energy in 2019 as the company strives to be an injury- and illness-free workplace.

Commitment to a Lower-Carbon Future

Duke Energy continues to build an energy future that is cleaner, smarter and more resilient. Duke Energy recognizes the long-term challenge that climate change presents, and that reducing carbon dioxide (CO₂) emissions is a benchmark in addressing this global challenge.

The company is at the forefront of the transformation underway in the industry. It is expanding renewable generation, transitioning our generation fleet from coal to natural gas and modernizing the grid to support new technologies. It has reduced its CO₂ emissions by 31 percent compared to 2005 levels, outpacing the industry average of 28 percent, and plans to reach a 40 percent reduction by 2030.



SAFETY FIRST

In 2018, our employees delivered strong safety results, consistent with our industry-leading performance from previous years.



| Duke Energy uses 60 drones – unmanned aerial vehicles – for multiple tasks that benefit customers.

The investments Duke Energy has made to retire less efficient coal- and oil-fired power plants, build highly efficient natural gas generation, expand its portfolio of renewables, and support its zero-CO₂ emissions hydropower and nuclear plants have diversified the company's system and significantly reduced CO₂ emissions.

Duke Energy's dedication to the facts, the science and a balanced generation portfolio helped it to achieve its 2018 emissions milestone, and positions the company for further reductions. Along with significant coal unit retirements over recent years, the company has saved over a million homes-worth of energy through efficiency programs, dedicated \$11 billion to cleaner energy capacity, and maintained its existing nuclear generation, among other achievements detailed in this report.

Reducing CO₂ emissions is only part of Duke Energy's commitment to a cleaner energy future. Duke Energy has a responsibility to take a comprehensive approach to reducing its environmental footprint, and has made significant progress across a number of areas, including reducing sulfur dioxide emissions by 96 percent from 2005 levels, to using municipal reclaimed water in energy generation in Florida.

Drones: Doing Work Faster and Safer

For nearly a century, unmanned aerial vehicles – or drones – were primarily tools for the military. But in the last decade, various industries have embraced this emerging technology.

The energy industry is no exception. Duke Energy started using drones in 2015 to inspect wind and solar sites. The uses keep growing: In February 2018, drone operators engineered a way to help string power lines in Puerto Rico following Hurricane Maria.

The company now has close to 100 qualified drone pilots, and operates around 60 drones. Employees in various departments are now certified pilots supporting every major line of business.

Drones have many uses at the company:

- Flying a drone with an infrared camera over a solar site eliminates time-consuming electrical testing and helps technicians identify faulty equipment within seconds of takeoff.

- Helicopters remain the primary tool for damage assessment after major storms because they can travel faster and farther than drones, but operators can use drones to perform detailed inspections, especially in densely populated areas where a helicopter cannot go safely.

Duke Energy first used drones for storm damage assessment following Hurricane Matthew in 2016 when crews were unable to drive through the Carolinas' flooded roads. With drones, the team could inspect power lines and vegetation quicker – knocking days off the company's assessment.

Recently in Ohio, a team completed a drone inspection of a transmission tower and power lines in days along the Ohio River. These inspections would have taken weeks if lineworkers had to climb the towers.

Across the energy industry, drones are making it easier and safer to inspect many tall structures. Instead of climbing a power pole (some are more than 300 feet tall), a drone can fly to the top and take pictures from multiple angles. Drones are also able to zoom in on equipment, which makes it easier to see small defects like cracks on a wind turbine or porcelain insulator.

Staying Ahead of the Game: Securing the Energy Grid

The world is becoming more digital every day – and with more technology comes more opportunities for cybersecurity threats.

As the largest operator of the energy grid, protecting our infrastructure, operations and customer information is a top priority for Duke Energy. The company is making the electric grid more secure, so that it can withstand and protect against the growing threats of cyber and physical attacks. With multiple layers of security, company experts can quickly identify threats and protect essential systems and equipment.

Duke Energy focuses its cybersecurity efforts in many areas. The company educates employees and increases awareness of threats – from routine test phishing emails and annual trainings to seminars and video resources. Duke Energy also maintains a round-the-clock incident response team of highly skilled cybersecurity professionals solely devoted to this issue, who identify and mitigate threats.

The company has implemented defenses to safeguard our systems – and continues to implement new safeguards as threats and technology evolve. To prepare for an incident, the company conducts drills to test emergency response plans and ensure employees are prepared in case an event occurs.

As with many industries, information sharing is also essential – that's why Duke Energy works with many federal and regional agencies, industry organizations and emergency management to share lessons learned.



AERIAL INSPECTIONS

Across the energy industry, drones are making it easier and safer to inspect many tall structures.

Hydro Team Manages Lakes During Wet Year

For more than 100 years, Duke Energy has been harnessing rivers to generate clean renewable energy. Its hydropower plants are key to the company's long-term mission to provide sustainable energy solutions that customers value.

2018 was an especially challenging year for Duke Energy's hydro operations team, with hurricanes Florence and Michael, followed by winter storm Diego and back-to-back rain storms in December. It contributed to one of the wettest years in almost 50 years.

For Duke Energy's hydro system, the 2018 yearly total rainfall was 56.55 inches, 10.29 inches above the 47-year long-term average. December was the wettest December since 1971, with 8.40 inches of rain across the entire hydro system.

Because the safety of downstream residents is the company's highest priority, the hydro team works closely with the company's meteorologists and hydrologists to anticipate and prepare for severe weather that could affect lake levels.

The company's 32 hydro stations and reservoirs in the Carolinas are operated from the Regulated Renewables Operations Center in Charlotte, which is staffed around the clock to manage reservoirs along the Catawba-Wataree, Yadkin-Pee Dee, Keowee-Toxaway, Broad and Nantahala rivers.

RELIABLE POWER

Safe, reliable power is a high priority for Duke Energy and our 7.7 million customers. In 2018, reliability remained high, despite hurricanes Florence and Michael, and winter storm Diego. Each year the company sets power delivery and generation fleet performance targets.

Power Delivery

The significant number of 2018 storms increased Duke Energy's average time without power.

Outage Statistics

	2015	2016	2017	2018	2018 Target
System Average Interruption Duration Index (SAIDI, or average time without power in minutes)^{1,2}	128	137	143	155	145

Generation

Duke Energy's diverse generation fleet with carbon-free nuclear, hydro, wind and solar; lower-carbon natural gas; and higher-carbon coal and oil reliably met customer demand.

The nuclear fleet optimized reliability, which is a measure of generation reliability along with the cost to achieve that reliability, continued a four-year positive trend, with a 2018 index of 198.49. The fossil/hydro fleet's optimized reliability continued its four-year positive trend, with a 2018 index of 59.54. The commercial fleet's renewables availability also continued its steady improvement trend, increasing from 94.6 percent in 2017 to 95.3 percent in 2018.

Generation Reliability

	2015	2016	2017	2018	2018 Target
Nuclear optimized reliability^{2,3}	278.81	243.88	230.46	198.49	203.41
Fossil/hydro optimized reliability^{2,3}	66.98	63.88	61.64	59.54	63.28
Commercial renewables availability³	93.3%	94.2%	94.6%	95.3%	94.5%

1 Outages with a duration greater than five minutes; statistics are reported per customer, excluding planned outages. Calculated in accordance with applicable guidelines.

2 Lower numbers indicate better performance.

3 Based on units operated by Duke Energy and ownership share.



COMMUNITY INPUT

Duke Energy is working proactively with local communities on more than 750 transmission projects.

The largest lakes on the Catawba River system – Lake James, Norman and Wylie – can store substantial amounts of precipitation and runoff, which significantly reduces downstream impacts to property and public safety. With a forecast of 8 to 10 inches of rainfall in the river basin from Hurricane Florence, the hydro team aggressively moved water in advance of the storm to create additional storage capacity, lowering the three lakes as much as 4 to 5 feet over six days.

During high water and flooding conditions, Duke Energy works closely with local emergency management officials to notify and protect the public. The company also maintains a lake website with current lake level information and high-water alerts, as well as a toll-free phone line with current lake levels, special information and advisories.

Although 2018 was a challenging year for managing reservoirs, the hydro operations team succeeded at keeping reservoirs from reaching critical levels that could have resulted in evacuations or power disconnects in low-lying areas.

Engaging the Community on Transmission Projects

Duke Energy is working proactively with local communities on more than 750 transmission projects. Projects range from new transmission line installations and rebuilding existing lines, to new substations, substation expansions, safety and security equipment, interconnection projects and pole replacements.

Customers have a desire to know what's happening near their homes and in their communities. They want more specific and detailed information regarding those projects.

To provide customers more information, Duke Energy is communicating through multiple channels including letters, postcards, project-specific documents, face-to-face meetings with key stakeholders, project-specific websites, public meetings, interactive maps and dedicated telephone project hotlines. The company takes customer preferences regarding the route and aesthetics into account to the extent practical while designing the project.

In Polk County, Florida, Duke Energy is rebuilding a 19.9-mile, 230-kilovolt transmission line. In advance of construction, company representatives worked with local communities to minimize the impacts from construction such as traffic lane closures, noise and other potential inconveniences to property owners.

This type of collaboration is playing out continuously throughout the Duke Energy service territory and resulting in better education about projects for the public, improved understanding by the company of community interests, and fewer impacts to property, natural and cultural resources, communities and commerce.

Strong Progress To Permanently Close Ash Basins

As Duke Energy's work to close 59 ash basins at 21 plants continues to accelerate, expert teams focused on basin closure logged more than 7 million hours in 2018, demonstrating the company's commitment to safely managing coal ash.

By the end of 2018, the company had ceased sending ash to nearly all basins, well in advance of state and federal requirements. At most operating coal plants, new systems and equipment replaced ash basins, positioning Duke Energy to begin the closure process.

COAL PLANT RETIREMENTS

About 22 million tons of ash have been excavated since basin closure began, including more than 5 million tons moved in 2018. Ash has been excavated from seven basins in North Carolina, South Carolina and Indiana, with seven others in North Carolina and Kentucky expected to be complete in 2019, including the Dan River site.

Duke Energy continues to look for innovative ways to recycle and reuse coal ash. Overall, the company successfully recycled nearly 80 percent of the coal ash produced at its operating power plants in 2018.

Hurricane Florence brought historic flooding to the Sutton and H.F. Lee facilities, displacing a small amount of ash and cenospheres, another combustion byproduct. N.C. Department of Environmental Quality testing validated that the public and water quality remained protected throughout the storm. The company's experts and spokespeople responded quickly to address and correct misleading media reports during the hurricane.

In April 2019, North Carolina officials ordered the company to excavate nine basins where closure decisions had not yet been made. We believe the decision imposes a financial burden on our customers and the economy of the Carolinas through the most expensive and disruptive closure option possible, despite that these basins are rated "low risk" by the state and capping would be fully protective of people and the environment.

The company is appealing the order as we continue to advocate for common sense plans to close all of our basins in ways that benefit customers and communities.

Retired Coal Units¹

	Location	Units	Total capacity (megawatts)	Actual retirement date
Edwardsport Station	Ind.	6, 7, 8	160	2010
Cliffside Steam Station	N.C.	1, 2, 3, 4	198	2011
Buck Steam Station	N.C.	3, 4	113	2011
W.H. Weatherspoon Plant	N.C.	1, 2, 3	177	2011
Gallagher Station	Ind.	1, 3 ²	280	2012
Cape Fear Plant	N.C.	5, 6	316	2012
Beckjord Station	Ohio	1	94	2012
Dan River Steam Station	N.C.	1, 2, 3	276	2012
H.F. Lee Plant	N.C.	1, 2, 3	382	2012
Robinson Plant	S.C.	1	177	2012
Buck Steam Station	N.C.	5, 6	256	2013
Riverbend Steam Station	N.C.	4, 5, 6, 7	454	2013
Sutton Plant	N.C.	1, 2, 3	575	2013
Beckjord Station	Ohio	2, 3	222	2013
Beckjord Station	Ohio	4, 5, 6	543	2014
W.S. Lee Steam Station	S.C.	1, 2	200	2014
W.S. Lee Steam Station	S.C.	3	170	2015 Converted to natural gas
Miami Fort Station	Ohio	6	163	2015
Wabash River Station	Ind.	2, 3, 4, 5, 6	668	2016
Crystal River Energy Complex	Fla.	1, 2	766	2018
Total		49	6,190	

Planned Coal Unit Retirements

	Location	Units	Total capacity (megawatts)	Planned retirement date
Asheville Plant	N.C.	1, 2	378	2020
Gallagher Station	Ind.	2, 4	280	2022
Allen Steam Station	N.C.	1, 2, 3	582	2024
Total		7	1,240	

Total Actual/Planned Retirements

7,430

- 1 In addition to coal unit retirements, a number of older oil/natural gas generation units have been or will be retired.
- 2 Per a 2009 settlement agreement with the U.S. Environmental Protection Agency.



NUCLEAR CORNERSTONE

With the company looking to reduce 2005 greenhouse gas levels by 40 percent by 2030, nuclear generation is the cornerstone for achieving this target.

Piedmont Innovates with Vertical Main Project

Although our natural gas business serves 1.6 million residential customers across its service territories, natural gas service in residential buildings such as apartments or condominiums is uncommon.

When the developer of City Lights in Nashville, Tennessee, approached Piedmont Natural Gas to bring natural gas service to its residents in a seven-story condominium complex, the company stepped up to the challenge.

“The growth in Nashville has been phenomenal over the past five years,” said Eddie Davidson, state government affairs director for Piedmont Natural Gas. “New buildings are being built taller and taller, requiring inventive natural gas solutions.”

While Piedmont is accustomed to burying pipelines – and running underground service lines to homes – delivering service vertically to homes dozens of feet off the ground requires a unique approach.

The Piedmont team engineered a “vertical main,” a natural gas line that runs upward through the entire building to a series of meter rooms, one on each floor. From these meter rooms, service lines run to the building’s 71 individual residences, as well as to an amenities area and restaurant space on the development’s first floor.

As with every project Piedmont undertakes, safety is the No. 1 priority. To ensure proper ventilation in the building, the team created a mechanical ventilation system from the first floor of the building to the roof where a fan runs continuously to draw air up and out of the building.

Because of its work on the City Lights project, Piedmont has the specifications in place to safely bring this innovative approach to other buildings, expanding the market of residential customers for the future.

Nuclear: Carbon-Free Powerhouse

Generating one-third of the company’s electricity, nuclear power is Duke Energy’s largest source of carbon-free energy.

All the company’s 11 nuclear generating units in the Carolinas have been operating for longer than 30 years. Yet, in many ways, the units are operating better than ever.

The company’s fleet achieved a combined capacity factor of 93 percent in 2018, which is above the industry average. That means the units were operating practically all the time. It was the 20th consecutive year the fleet capacity factor exceeded 90 percent.

Many units of the company’s plants produced record generation during 2018 – in either specific months or quarters. That power was needed during the hottest and coldest days of the year – since 2018 had both extreme cold and heat in the Carolinas.

Continuous operation marks of more than 500 days in a row were hit by several units in 2018. For the nuclear industry, that was unheard of 20 years ago.

With the company looking to reduce 2005 greenhouse gas levels by 40 percent by 2030, nuclear generation is the cornerstone for achieving this target.