



PPL CORPORATION  
2018 SUSTAINABILITY REPORT

Energy forward.



# Sustainability commitments

PPL makes the following commitments to grow and innovate in a responsible, reliable way that benefits customers, shareowners, employees and society as a whole.

## Energy and Environment



### Advance a cleaner energy future

Encourage responsible stewardship in partnership with our customers and stakeholders to have a sustainable environmental impact



### Build tomorrow's energy infrastructure

Invest in tomorrow's energy infrastructure by developing a more reliable, resilient and efficient grid that enables continued progress and a cleaner energy future

## Social Responsibility



### Exceed customer expectations

Provide energy safely, reliably and in an environmentally responsible manner at the lowest reasonable cost



### Foster an exceptional workplace

Cultivate success by energizing an inclusive, respectful and diverse workplace that rewards performance, fosters professional development, encourages employee engagement and enables employees to achieve their full potential



### Strengthen communities

Empower the success of future generations by helping to build strong communities today

## Governance and Management



### Create extraordinary shareowner value

Create long-term value for shareowners through fiscal discipline, continuous improvement, environmental stewardship and enduring strategic investments



### Drive best-in-sector operational performance

Excel in safety, reliability, customer responsiveness and energy efficiency while maintaining a culture that fosters innovation



A WPD employee inspects a substation.

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# Message from our Chairman, President and CEO

At PPL, our vision is to empower economic vitality and quality of life. For nearly a century, PPL employees have done just that, powering progress in the areas we serve.

We're very proud of our past and the role we've played in our customers' lives. At the same time, we're just as excited about the opportunity we have to shape our shared energy future.

We remain steadfast in our long-term strategy to deliver best-in-sector operational performance, invest responsibly in a sustainable energy future, maintain a strong financial foundation, and engage and develop our people, all while staying true to our sustainability commitments (see [page 2](#)).

As we pursue this strategy, every action we take and every decision we make is focused on the future. That's what Energy Forward, the theme of this year's report, means to us.

It's about:

- Strengthening the grid to improve resiliency in the face of future storms
- Reshaping electricity networks to reliably and efficiently enable more distributed energy resources, like solar and energy storage
- Shifting in a smart way to a cleaner energy mix without sacrificing safety, reliability and affordability for those we serve
- Leveraging data and technology to improve service and empower customers
- Growing PPL in a responsible, sustainable way for those who invest their hard-earned dollars in us
- Building a more diverse and inclusive PPL

- Getting more kids interested in science, technology, engineering and math (STEM) to develop tomorrow's energy leaders
- Giving back in ways that support healthy communities

This is how we invest our energy at PPL. And these are just some of the many ways our team of more than 12,000 create value each and every day.

Together, we strive to do well by doing good, and the results show:

In 2018, we delivered energy safely, reliably and affordably to more than 10 million electricity customers in the U.S. and U.K. and more than 300,000 natural gas customers in Kentucky. No job we do is more important than that.

We invested roughly \$3.3 billion in new infrastructure to benefit our customers. This included modernizing the grid, incorporating automation, replacing and building new power lines and substations, and enhancing security, both cyber and physical, to protect against a new generation of threats.

We continued to support a cleaner energy future. We set a goal to cut PPL's carbon emissions 70 percent from 2010 levels by 2050. We acquired Safari Energy, LLC, a leading provider of solar energy solutions for businesses in the U.S. We connected nearly 300 megawatts of solar, wind and energy storage resources to our networks, and we advanced nearly two dozen initiatives aimed at enabling more distributed energy resources on the grid.

In the regions we serve, PPL and its charitable foundations contributed more than \$12 million to support sustainable communities and expand educational opportunities. Meanwhile, our employees generously donated more than \$6 million and thousands of hours to nonprofit organizations throughout our service territories, working to build stronger, healthier and more vibrant communities.



WILLIAM H. SPENCE  
CHAIRMAN, PRESIDENT AND CHIEF EXECUTIVE OFFICER

We achieved these accomplishments while delivering strong financial performance and award-winning customer satisfaction in each of the regions we serve.

The pages that follow offer a detailed look at what's important to us as we work to create additional value for shareowners; to grow sustainably; to foster a culture of inclusion, creativity, innovation and continuous improvement; and to make a positive impact on society. As always, we welcome your feedback on the direction we're headed, and we appreciate your interest in PPL.

Sincerely,

William H. Spence

## About our company

Headquartered in Allentown, Pa., PPL Corporation (NYSE: PPL) is one of the largest companies in the U.S. utility sector. The company serves more than 10 million customers in the United States and United Kingdom and employs more than 12,000 people.

**Our mission** is to provide energy in a safe, reliable manner at a reasonable cost to our customers and best-in-sector returns to our shareowners. We believe our competitive earnings, growing dividend, solid management and high-quality assets represent an attractive low-risk opportunity for those looking to invest in the utility sector.

**Our vision** is to empower economic vitality and quality of life, and we are a positive force in the communities where we do business. We support human services, education, arts and culture, and environmental stewardship. In addition, our companies work closely with local and state officials to foster economic development that creates jobs throughout the territories we serve.

For details on PPL's leadership team, please visit [www.pplweb.com/who-we-are/leadership-team/](http://www.pplweb.com/who-we-are/leadership-team/).

PPL Corporation's operating companies are located in three primary jurisdictions: Kentucky, Pennsylvania and the U.K. Each of these jurisdictions has different laws, regulatory agencies and local governing bodies. Details are available in the company's 2018 Form 10-K Report, Part I, Business (filed with the Securities and Exchange Commission).



# At a glance

## OUR VALUES

Safety and Health

Customer Focus

Diversity and Engagement

Performance Excellence

Integrity and Openness

Corporate Citizenship



J.D. POWER AWARDS FOR CUSTOMER SATISFACTION



MILLIONS IN UTILITY CUSTOMERS IN THE U.S. AND THE U.K.



EMPLOYEES



BILLIONS IN ANNUAL REVENUE



MEGAWATTS OF REGULATED GENERATION CAPACITY IN THE U.S.



KILOWATT-HOURS OF ELECTRICITY DELIVERED IN 2018



MILES OF ELECTRIC LINES

\*As of Dec. 31, 2018

## PPL Electric Utilities Corporation

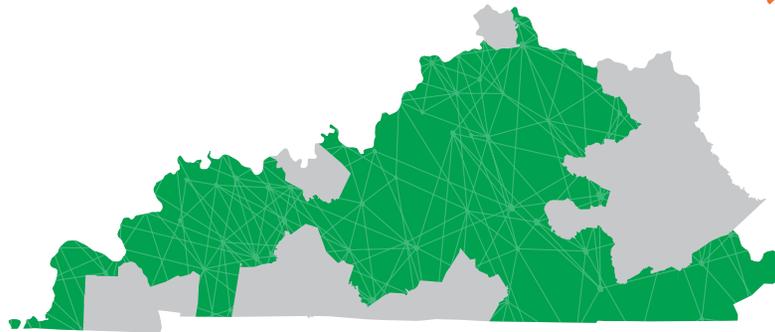
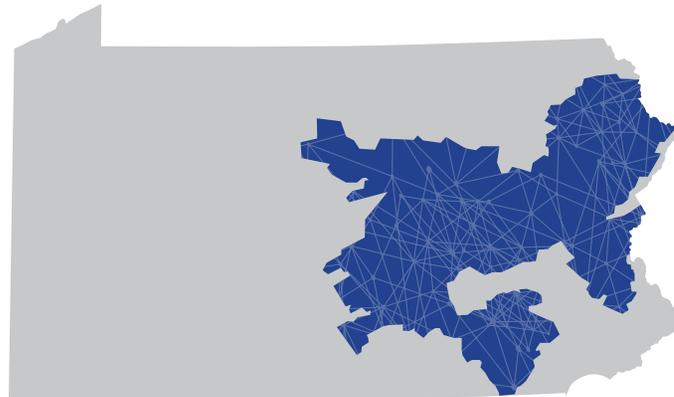
PPL Electric Utilities Corporation (PPL Electric) provides electricity distribution and transmission services to about 1.4 million customers in Pennsylvania and consistently ranks among the best companies in the U.S. for customer service.

## Louisville Gas and Electric Company and Kentucky Utilities Company

Louisville Gas and Electric Company (LG&E) and Kentucky Utilities Company (KU) are regulated utilities that are engaged in the generation, transmission, distribution and sale of electricity in Kentucky and Virginia. They serve nearly 1.3 million customers and have consistently ranked among the best companies for customer service in the U.S. In Virginia, KU operates under the name Old Dominion Power Company. LG&E and KU operate about 8,000 megawatts of power generation. In addition, LG&E is engaged in the distribution and sale of natural gas.

## Western Power Distribution

Western Power Distribution (WPD) is the electricity distribution network operator in the U.K. for the East and West Midlands, South West England and South Wales, serving approximately 8 million end-use customers. Operating the U.K.'s largest distribution network by geographical area, WPD covers densely populated residential areas and widely dispersed rural communities. WPD has been recognized consistently as the leading electricity distribution network operator by U.K. regulator, Office of Gas and Electricity Markets (Ofgem).



# Performance data

Key metrics on our sustainability performance from 2016-2018

ENERGY PORTFOLIO		2016	2017	2018
<b>GENERATION</b>	Generation capacity (MW)	8,011	8,017	8,017
	Net generation for the data year (MWh)	33,968,857	32,704,879	34,546,832
	Generation efficiency (BTU/Net Generation)	10.6	10.1	10.1
<b>EMISSIONS</b>	Carbon dioxide (CO <sub>2</sub> e) emissions (owned generation, purchased power and other operations) (metric tonnes for data year)	29,515,412	29,083,085	29,873,408
	Generation carbon emissions intensity (metric tonnes/net MWh)	0.85	0.87	0.85
	Sulfur dioxide emissions intensity (metric tonnes/net MWh)	0.00048	0.00041	0.00048
	Nitrogen dioxide emissions intensity (metric tonnes/net MWh)	0.00054	0.00048	0.00050
	Total mercury emissions (Kg)	70	77	71
<b>WATER</b>	Water withdrawal (megaliters/year)	534,674	494,946	512,000
	Water withdrawn compared to waterbody size (highest percent impact)	0.81	0.74	0.80
	Volume of water recycled and reused (percent of total)	89.7	96.07	88.93
<b>WASTE</b>	Percent of coal combustion products beneficially used	34.2	34.1	33.5
INFRASTRUCTURE		2016	2017	2018
<b>ELECTRICITY</b>	Miles of electric transmission lines	10,589	10,633	10,659
	Miles of electric distribution lines	208,143	208,077	207,709
<b>NATURAL GAS</b>	Miles of gas distribution mains	4,363	4,310	4,369
	Miles of gas transmission mains	401	396	370

# Performance data

OPERATIONAL PERFORMANCE		2016	2017	2018
<b>SAFETY</b>	Total hours worked	24,700,051	24,157,564	23,602,105
	Number of lost-day cases	24	18	15
	Lost-time incident rate	0.19	0.15	0.13
	Recordable incident rate	1.30	1.08	1.18
	Work-related fatalities	0	1	0
<b>RELIABILITY</b>	SAIFI – Average number of interruptions	.59	.55	.60
	SAIDI – Average outage duration (in minutes)	41.04	39.25	43.80
	CAIDI – Average restoration time (in minutes) <sup>12</sup>	69.86	59.84	73.59
	<i>*Reliability data for each operating utility is available in the Appendix on page 85.</i>			
RESOURCES AND COMMUNITY		2016	2017	2018
Customer count (at end of year)		10,485,850	10,597,979	10,649,818
<b>ENERGY EFFICIENCY</b>	Incremental annual electricity savings from energy efficiency measures (MWh)	433,000	671,055	547,291
	Total rebates (in millions)	\$34.5M	\$35.7M	\$30.8M
<b>EMPLOYEE AND BOARD DATA</b>	Total number of employees	12,689	12,512	12,444
	Percentage of women employees	21.1	21.4	21.5
	Percentage of minority employees	6.2	6.4	6.4
	Total hours of training	610,180	570,488	567,234
	Average hours of training per employee	48	46	46
	Total number on Board of Directors	9	9	10
	Total number of women on Board of Directors	1	1	2
	Total number of minorities on Board of Directors	4	4	4
<b>SUPPLY CHAIN</b>	Total spent on diverse businesses	\$151M	\$170M	\$212M
	Number of diverse businesses	310	277	265
<b>STRENGTHEN COMMUNITIES</b>	Total charitable giving in communities served	\$11M	\$10M	\$12M
	Total volunteer hours	50,000	69,000	78,000



## Awards and honors

In 2018, PPL Corporation and its regulated utilities were recognized for outstanding performance in a number of areas. Some highlights include:

### PPL Corporation

- Recognized by Forbes Magazine as not only one of America's Best Employers in 2018, but also one of the World's Best Employers.
- Ranked by Forbes Magazine as America's Best Employers for Diversity in 2018.
- Named 2018 Best Place to Work for Disability Inclusion on the Disability Equality Index (Pennsylvania).
- Received a perfect score of 100 percent on the Human Rights Campaign Foundation's Corporate Equality Index, a national benchmarking survey and report on corporate policies and practices relating to lesbian, gay, bisexual and transgender workplace equality (Pennsylvania).

### PPL Electric

- Ranked highest for residential customer satisfaction among large utilities in the East region for a seventh-consecutive year by J.D. Power.
- Ranked in the top 10 nationally and first in the mid-Atlantic region for grid reliability by the Institute of Electrical and Electronics Engineers.
- Recognized by the Energy Association of Pennsylvania with the Safety Achievement Award for the company's exceptionally low injury rates.

### LG&E and KU

- Ranked highest (KU) for residential customer satisfaction among midsize electric utilities in the Midwest region by J.D. Power.
- Named among the "Top 10 Utilities" in the U.S. for economic development by Site Selection, the international economic development magazine. Since 2010, Site Selection has recognized the company's economic development efforts six times.
- LG&E and KU's Senior Research Engineer Dr. Nick Jewell (pictured above, center) was recognized as a Top Innovator by Public Utilities Fortnightly for his work at the company's Energy Storage and Demonstration site at the E.W. Brown Generating Station.

### WPD

- Ranked as best performer in Ofgem's Broad Measure of Customer Satisfaction for seventh year in a row.
- Attained the U.K.'s Customer Service Excellence Award (formerly the Charter Mark) for the 26th consecutive year.
- Received the Service Excellence Award from the Action on Hearing Loss Cymru for its efforts to ensure accessibility for customers and employees who are deaf or hard of hearing.
- Received two of the four gold awards presented by the Sustainability First think tank to companies working on projects to benefit vulnerable customers.
- Ranked as the No. 1 Distribution Network Operator for best overall customer service provider on Twitter by social media analysis service Help Handles. The company's Twitter account @wpduk also reached No. 1 in the U.K. for its Twitter performance in March.



## Materiality

We define sustainability materiality to include issues that may be helpful to stakeholders in evaluating the company's social, governance, economic and environmental performance, and overall commitment to sustainability.

A cross-functional corporate sustainability team conducted an initial materiality assessment in 2016 to determine the key priorities that may be helpful to stakeholders in evaluating the company's performance in these areas.

PPL has since become a member of Electric Power Research Institute's (EPRI) Sustainability Interest Group; assessed alignment of its sustainability strategy and commitments with the U.N. Sustainable Development Goals for the utility sector; participated in the development of Edison Electric Institute's (EEI) environmental, social, governance and sustainability-related reporting template for investor-owned utilities; issued a climate assessment report; established a carbon-reduction goal and began responding to the CDP Climate Change questionnaire.

The corporate sustainability committee, which includes senior leaders throughout the corporation and its various business units, is responsible for developing sustainability strategy, providing oversight and establishing the priorities and performance metrics.

The sustainability strategy, commitments and priorities are reviewed by the corporate leadership council and presented to the Board of Directors, with specific oversight by the Compensation, Governance and Nominating Committee of the Board.

In 2018, PPL conducted a materiality assessment to reevaluate key sustainability issues. This included reviewing benchmarking data associated with peer companies, interviews with stakeholders within the company and surveys of external stakeholders such as customers and community partners. Based on the feedback from this materiality reassessment, the following changes were made:

- *Utility industry transformation, supply chain and workforce development* were added as new, separate priorities.
- *Emissions reduction and environmental stewardship* were updated to reflect the wider scope of the company's efforts in these areas.
- *Innovation and technology* was updated to align with the company's objective to be a leader in the transformation of the electric utility industry for our customers.

# Sustainability commitments and priorities

To identify sustainability priorities, a cross-functional corporate sustainability team conducted benchmarking of PPL’s peer companies, analyzed the materiality study conducted by the Sustainability Interest Group of EPRI, reviewed the United Nations Sustainable Development Goals, conducted surveys and interviews, and reviewed company documents, such as risk-management reports, business plans and customer-satisfaction surveys.

## COMMITMENTS

 Create extraordinary shareowner value

 Drive best-in-sector operational performance

 Advance a cleaner energy future

 Build tomorrow’s energy infrastructure

 Exceed customer expectations

 Foster an exceptional workplace

 Strengthen communities

## PRIORITIES

**Cybersecurity and information protection** – Protect the grid, customer and employee data, and the company’s assets  
**Economic viability** – Promote the long-term financial viability of the company  
**Governance, compliance and ethics** – Maintain strong corporate governance, compliance and ethical business practices  
**Utility industry transformation** – Advance regulatory structures to support industry transformation

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**Operational efficiency** – Strive for best-in-sector performance  
**Reliability** – Excel in reliability  
**Safety & health** – Drive employee and public safety  
**Supply chain** – Foster a pool of diverse, strategic suppliers and business partners that mirror the communities we serve

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**Emissions reduction** – Take reasonable measures, within the regulatory frameworks in which we operate, to support reduction of carbon dioxide and other emissions  
**Environmental stewardship** – Responsibly manage our impact on the environment through conservation and sustainable practices

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**Distributed energy resources** – Encourage and support development of distributed energy resources and renewables  
**Grid security** – Protect the physical security of the grid  
**Infrastructure investments** – Enhance the reliability and resiliency of service through continued investments

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**Innovation and technology** – Be a leader in the transformation of the electric utility industry  
**Affordability** – Strive to deliver affordable electricity and natural gas service for our customers  
**Customer satisfaction** – Deliver excellent customer service  
**Energy efficiency** – Implement tools and resources to reduce energy consumption

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**Diversity and inclusion** – Foster an inclusive, respectful and diverse workplace  
**Employee engagement** – Create a workplace that fosters an engaged, high-quality workforce  
**Workforce development** – Train and develop our workforce for future success

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**Community investments** – Make positive contributions to the communities we serve through philanthropy and volunteerism  
**Emergency preparedness** – Maintain business continuity and prepare for events that affect our ability to serve customers

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A WPD lineworker completes a demonstration during a public safety event.



## Our stakeholder engagement

A stakeholder is anyone with an interest in our business, or anyone who is affected by what we do. PPL and its subsidiaries reach out to stakeholders on both a formal and informal basis. Our Investor Relations department answers questions from investors individually and at investor events; our Customer Service teams respond to customer inquiries; and our Public Affairs teams consult with state and national regulators and public officials on a regular basis and regularly engage subject matter experts. We track customer service issues, including response time and reliability as part of our regular operations. We conduct regular market research to establish customer satisfaction.

We also are active with community groups that help us understand the connection between their needs and our role as an energy provider and employer. The company regularly schedules public open houses when planning major infrastructure projects. In addition, we monitor and respond to stakeholder feedback at public hearings, forums or town halls hosted by regulators and public officials who are considering our operations.



### KEY STAKEHOLDERS:

- Communities*
- Customers*
- Employees*
- Facility neighbors*
- Government*
- Industry associations*
- Non-governmental organizations*
- Shareowners*
- Suppliers*

## Key priorities for stakeholders

Ongoing dialogue with many different stakeholders gives us the opportunity to learn what they consider the most important issues. These discussions help us identify key priorities. Here they are presented alphabetically to make clear they are equally important.

- Air emissions
- Community outreach
- Customer satisfaction
- Cybersecurity
- Diversity and inclusion
- Economic development
- Energy affordability
- Energy efficiency
- Environmental management
- Ethics and compliance
- Financial performance
- Greenhouse gases
- Habitat and biodiversity
- Infrastructure investments
- Jobs and employment
- Reliability and infrastructure
- Renewable energy
- Safety
- Training and development
- Utility industry transformation
- Waste management
- Water management

STAKEHOLDER GROUP	TYPE OF ENGAGEMENT
<b>Communities</b>	<ul style="list-style-type: none"> <li>• Support for events and programs of nonprofits, chambers and associations</li> <li>• Volunteerism (board service, events, long-term programs)</li> </ul>
<b>Customers</b>	<ul style="list-style-type: none"> <li>• Websites</li> <li>• Consumer advisory panels</li> <li>• Customer commitment advisory forums</li> <li>• Market research</li> <li>• Demand-side management/energy efficiency advisory groups</li> <li>• Billing statements and messaging</li> <li>• Email newsletters</li> <li>• News releases and local media</li> <li>• Customer feedback (surveys, online comments, phone calls)</li> <li>• Account management</li> <li>• J.D. Power survey</li> </ul>
<b>Employees</b>	<ul style="list-style-type: none"> <li>• Company intranet</li> <li>• Training events</li> <li>• Town hall meetings</li> <li>• Employee feedback (via surveys)</li> <li>• Volunteer programs</li> <li>• Business resource groups</li> <li>• Performance reviews</li> </ul>
<b>Facility neighbors</b>	<ul style="list-style-type: none"> <li>• Plant advisory committees</li> </ul>
<b>Government (local, state, federal)</b>	<ul style="list-style-type: none"> <li>• Continuous dialogue</li> <li>• Attendance at meetings and hearings with regulators and policymakers</li> </ul>
<b>Industry associations</b>	<ul style="list-style-type: none"> <li>• Attendance at regular meetings and conferences for organizations such as:                             <ul style="list-style-type: none"> <li>– Edison Electric Institute</li> <li>– Electric Power Research Institute</li> <li>– American Gas Association</li> <li>– Energy Networks Association (U.K.)</li> <li>– Local and state chambers of commerce</li> </ul> </li> </ul>
<b>Environmental groups</b>	<ul style="list-style-type: none"> <li>• Ongoing discussions and partnerships around specific topics related to operational activities</li> </ul>
<b>Shareowners</b>	<ul style="list-style-type: none"> <li>• Investor calls</li> <li>• Quarterly earnings news releases</li> <li>• Investor relations website</li> <li>• Meetings</li> </ul>
<b>Suppliers</b>	<ul style="list-style-type: none"> <li>• Supplier meetings</li> <li>• Supplier networking summits</li> </ul>

## Learning from our stakeholders - giving customers a voice

How does a company in a monopoly position avoid stagnating? Engage with stakeholders, set clear goals for continuous improvement, and encourage a culture of creativity and innovation among employees.

How do you engage with customers and other key stakeholders to give them a voice? At WPD, we connect with stakeholders through our annual WPD Stakeholder Engagement Roadshow.

Our 2018 roadshow included a series of six workshops throughout our service territories. At each workshop, WPD presents its business plan. Stakeholders then debate a series of questions before voting for their preferences in what WPD calls a challenge panel.

The stakeholders come from a variety of backgrounds: nonprofits, businesses, consumer groups, local government, universities, environmental organizations and utilities.

With hundreds of attendees, the roadshows have to be more informative than consultative. But stakeholders are still given the chance to debate and suggest additions to WPD's business plan.

"It's not always easy," said Alex Wilkes, stakeholder engagement manager for WPD. "One of the things we asked roadshow attendees to do in 2018 was to look beyond 2023 to the next business plan. This means looking to the future at a time when the sheer speed of innovation means we don't know what the issues will be. For instance, this year cybersecurity has emerged as the most important issue for WPD to address, but at last year's roadshows it wasn't on the radar."

As the stakeholders come from such a wide range of backgrounds, they are able to bring their own insights and examples to the roundtable discussions. The ability to gain knowledge is important, but the key to their continued presence is WPD's commitment to acting on their feedback.



“We want to be the best company at what we do, and we want to be recognized by customers as the best. Knowing how stakeholders think we're doing, whether we're doing the right thing and what we can do in the future prevents us from stagnating.”

— Alex Wilkes, stakeholder engagement manager for WPD

# About this report

Our current sustainability programs, performance metrics and initiatives are presented throughout this report and are referenced in the GRI Index on [page 70](#). This report presents our sustainability performance following the GRI Framework with the intent to be in accordance with GRI Standards at the "Core" level and respond to every material aspect for our company.

Our views about the company's direct and indirect impacts, risks, challenges and opportunities are presented throughout this report and in other publicly available documents such as the [2018 Form 10-K](#), 10-Qs, [2019 Proxy Statement](#) and [2018 Annual Report](#) posted on the company's website.

## Report profile

This report's content covers activities that occurred in calendar year 2018. All data reflect information as of Dec. 31, 2018. The report was published in 2019.

PPL Corporation intends to report on its sustainability activities annually. The report is reviewed by the company's leadership team, including the chief executive officer. External audits for this report have not been conducted, but an internal review was completed by the Corporate Audit department and Compliance and Ethics department.

Throughout this report, when we refer to PPL, we are discussing all of PPL Corporation and its subsidiaries, including PPL Electric, LG&E and KU, and WPD. For specific issues, data and discussion about each entity may be disclosed.

Material aspects and boundaries vary slightly from subsidiary to subsidiary, in part because of different regulatory frameworks and each subsidiary's level of involvement with energy production and delivery.

Regarding boundaries, most of the report content is focused on internal boundaries. The company also is reliant on certain regulatory, legislative and community partners to manage some material issues, as discussed in the report.

As we prepared our document, we considered GRI's principles for defining report content and quality.

Statements contained in this report concerning future events are forward-looking statements as defined by federal securities laws. Although PPL Corporation believes that the expectations and assumptions reflected in these forward-looking statements are reasonable, these statements involve a number of risks and uncertainties, and actual results may differ materially from the results discussed in the statements. Any forward-looking statements should be considered in light of those uncertainties and assumptions and in conjunction with PPL Corporation's 2018 Form 10-K and other reports on file with the Securities and Exchange Commission.

Conversions of British pounds sterling to U.S. dollars marked throughout this report were based on the foreign exchange rate on Dec. 31, 2018.

Questions and comments about this report can be directed to [Community@pplweb.com](mailto:Community@pplweb.com).

# Create extraordinary shareowner value

Create long-term value for shareowners through fiscal discipline, continuous improvement, environmental stewardship and enduring strategic investments

## Preparing for our energy future

While no one can predict the future, the leaders of PPL's utilities see signs pointing to a very different grid than the one that has powered our lives for decades.

"You can wait to see what the future holds, or you can prepare, innovate and be ready to take advantage of what you know is coming. We're going to be ready," said PPL Electric President Gregory N. Dudkin.

In Pennsylvania, PPL Electric is conducting research on solar and other distributed energy resources, installing the next generation of meters for its customers and using advanced digital technologies and Internet-enabled applications to detect and respond faster to changing conditions on the grid.

In the U.K., WPD continues its transition from Distribution Network Operator (DNO) to Distribution System Operator (DSO) to drive performance and efficiency on the power grid.

WPD has historically operated in a DNO role, delivering electricity in one direction, from the high-voltage transmission grid to industrial, commercial and residential users. That is changing with a need to actively manage the two-way flow of energy across the distribution system, adjusting for contributing energy sources like private solar power.

In Kentucky, LG&E and KU own and operate the state's largest universal solar array, producing 10 megawatts of solar-generated energy at their E.W. Brown Generating Station. They also have business solar offerings for commercial and industrial customers, a subscription-based community solar program called Solar Share, and a Green Energy program allowing the utilities to purchase regional renewable energy



*Nicole Lacouve, support engineer for PPL Electric, explains how a battery storage unit keeps customers in power and regulates voltage fluctuations on a power line.*

credits on a customer's behalf. The utilities have proposed offering a business-attracting "Green Tariff" to further promote renewable energy growth and economic development in Kentucky.

Apart from the growing influence of diverse generation sources, the future will require investments in non-wires alternatives, like

battery storage and energy management. We will rely more than ever on big data and use that data to drive important decisions.

Whether through a new generation of advanced meters or finding new business opportunities, PPL's utilities are embracing new and expanded ways of serving their customers and taking steps to remain at the forefront of creating the grid of the future.

## Financial highlights

### For the years ended December 31

FINANCIAL	2018	2017
Operating revenues (millions)	<b>\$7,785</b>	\$7,447
Net income (millions)	<b>\$1,827</b>	\$1,128
Earnings from ongoing operations (millions) (a)	<b>\$1,705</b>	\$1,553
Total assets (millions) (b)	<b>\$43,396</b>	\$41,479
Earnings per share - Diluted	<b>\$2.58</b>	\$1.64
Earnings from ongoing operations per share - Diluted (a)	<b>\$2.40</b>	\$2.25
Dividends declared per share	<b>\$1.64</b>	\$1.58
Book value per share (b,c)	<b>\$16.18</b>	\$15.52
Market price per share (b)	<b>\$28.33</b>	\$30.95
Market price/book value ratio (b)	<b>175%</b>	199%
Dividend yield	<b>5.8%</b>	5.1%
Dividend payout ratio (d)	<b>64%</b>	96%
Dividend payout ratio - earnings from ongoing operations (d,e)	<b>68%</b>	70%
Price/earnings ratio (d)	<b>11.0</b>	18.9
Price/earnings ratio - earnings from ongoing operations (d,e)	<b>11.8</b>	13.8
Return on common equity	<b>16.1%</b>	10.9%
Return on common equity - earnings from ongoing operations (e)	<b>15.0%</b>	14.8%

### OPERATING - DOMESTIC ELECTRICITY SALES (GWh)

Retail delivered	<b>68,686</b>	65,751
Wholesale supplied	<b>2,461</b>	2,084

### OPERATING - INTERNATIONAL ELECTRICITY SALES (GWh)

United Kingdom	<b>74,181</b>	74,317
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(a) Management utilizes "Earnings from Ongoing Operations" as a non-GAAP financial measure that should not be considered as an alternative to reported earnings, or net income, an indicator of operating performance determined in accordance with GAAP. PPL believes that Earnings from Ongoing Operations is useful and meaningful to investors because it provides management's view of PPL's earnings performance as another criterion in making investment decisions. In addition, PPL's management uses Earnings from Ongoing Operations in measuring achievement of certain corporate performance goals, including targets for certain executive incentive compensation. Other companies may use different measures to present financial performance.

Earnings from Ongoing Operations is adjusted for the impact of special items. Special items are presented in the financial tables on an after-tax basis with the related income taxes on special items separately disclosed. Income taxes on special items, when applicable, are calculated based on the effective tax rate of the entity where the activity is recorded. See "Reconciliation of Earnings from Ongoing Operations" on pages 38-39 (millions of dollars) and page IV (per share) of [PPL's 2018 Annual Report](#).

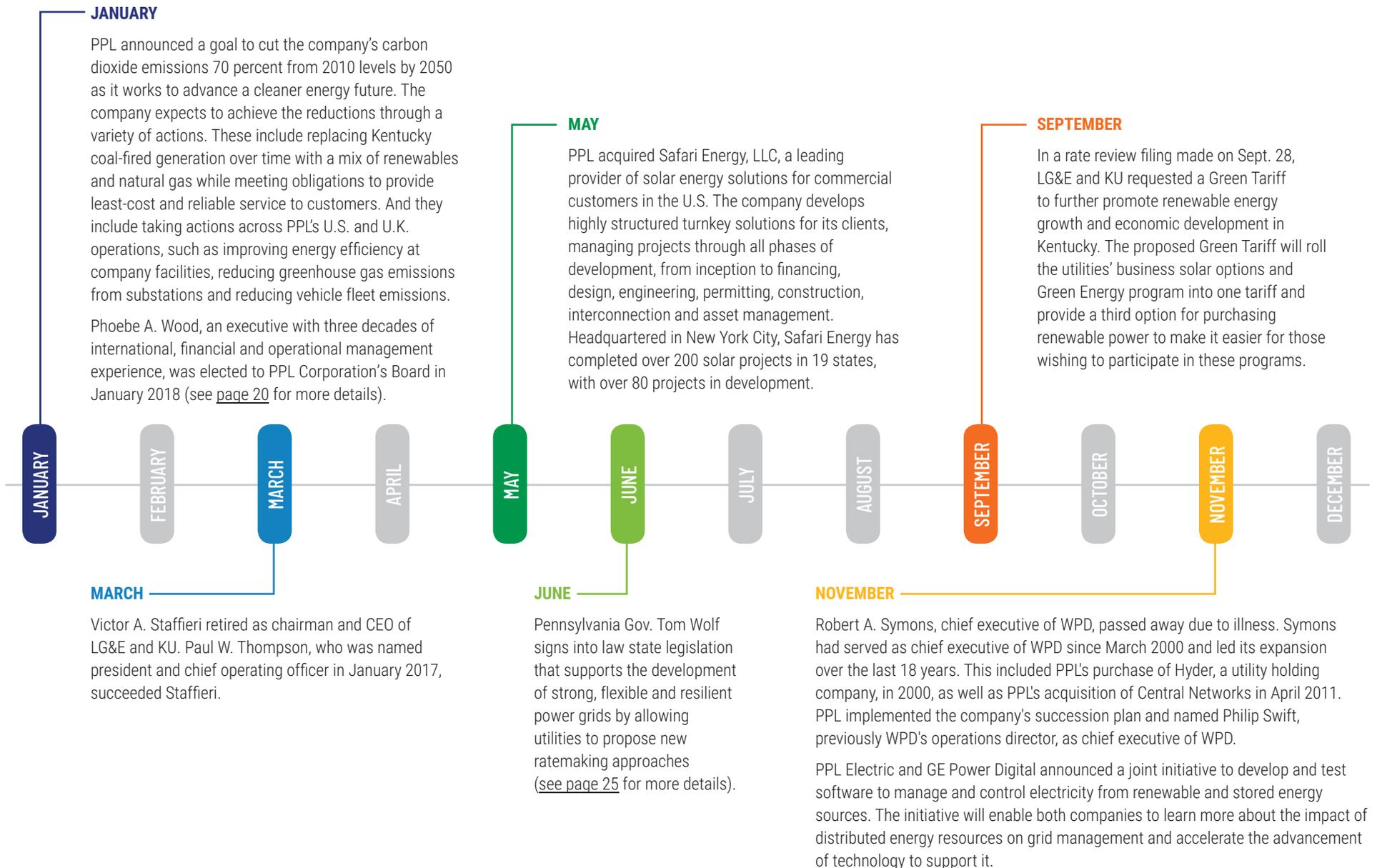
(b) End of period.

(c) Based on 720,323 and 693,398 shares of common stock outstanding (in thousands) at December 31, 2018, and December 31, 2017.

(d) Based on diluted earnings per share.

(e) Calculated using earnings from ongoing operations, which is a non-GAAP financial measure that includes adjustments described above in footnote (a).

# Significant operational and regulatory highlights during the reporting period





From left to right: Keith H. Williamson, Armando Zagalo de Lima, John W. Conway, William H. Spence, Phoebe A. Wood, Raja Rajamannar, Natica von Althann, Steven G. Elliott, Craig A. Rogerson. Rodney C. Adkins is not pictured.

## Governance

Strong leadership and well-managed operations are the cornerstones of a successful business. PPL's corporate governance practices are designed to ensure long-term value for our shareowners, customers and the communities in which we operate. The Board of Directors' responsibilities include overseeing the management of PPL, selecting the company's leaders, approving long-range strategic plans and advising senior management.

The Board has designated its Compensation, Governance and Nominating Committee as the body responsible for overseeing PPL's practices and positions to further its corporate citizenship, including sustainability, environmental and corporate social responsibility initiatives.

Phoebe A. Wood, an executive with three decades of international, financial and operational management experience, was elected to PPL's Board in January 2018. Her appointment brought PPL's total Board membership during 2018 to 10, nine of whom are outside, independent directors.

PPL Corporation's [Guidelines for Corporate Governance](http://www.pplweb.com/Guidelines) are posted online on the corporate website at [www.pplweb.com/Guidelines](http://www.pplweb.com/Guidelines).

Additional details about the role of the Board, independence of the directors, role of the independent directors, role of the presiding or "lead" director, and selection of directors can be found in the [Guidelines for Corporate Governance](#).

## Incentives and remuneration

### Director compensation

The Board believes that to continue to attract talent to the Board over time, outside directors should be remunerated for their services at a level competitive with that provided by other comparable publicly traded corporations. Directors who are company employees (currently only PPL's chief executive officer) do not receive any separate compensation for service on the Board of Directors or committees of the Board of Directors. Information regarding compensation of PPL's directors can be found in the [2019 Proxy Statement](#), beginning on page 20.

### 2018 executive compensation

Information regarding PPL's executive compensation program and compensation philosophy and objectives, as well as a discussion of how executive compensation decisions affecting our named executive officers were made for 2018, are included in the "Compensation Discussion and Analysis" section of the 2019 Proxy Statement. Additional details about specific compensation of the named executive officers are included in the [2019 Proxy Statement](#), beginning on page 55.

## Enterprise risk management

PPL maintains a robust enterprise risk management (ERM) process that provides a business portfolio view of material risks that may impact achievement of PPL's business strategy.

As part of the ERM process, representatives from PPL's operating companies and service groups identify, assess, monitor and report on both ongoing and emerging risks. PPL's Risk Management group oversees this process and reports quarterly to the Audit Committee of PPL Corporation's Board of Directors.

## Business continuity and crisis response planning

PPL has a Corporate Crisis Plan to ensure the company is prepared to respond quickly in the event of a corporate-level crisis; to protect the public, environment, employees, facilities and operations; to mitigate impacts; to define roles for response and recovery; and to establish internal and external communications protocols.

The plan establishes the PPL Executive Crisis Team (ECT), which sets policy, directs crisis preparedness by the company's various business lines and operations, assesses and directs the provision of corporate-level resources and coordinates activities with regional company locations in the event of a major crisis.

The standing members of the ECT are the chairman, president and chief executive officer; the executive vice president, general counsel and corporate secretary; the executive vice president and chief financial officer; the vice president-Public Affairs and Sustainability; the director-Corporate Communications; and the director-Protective Services. Additional members can be added to the ECT as needed, depending on the situation. If the crisis involves operations, the team would typically include the business line president whose business unit is involved.

The team maintains various crisis planning scenarios and robust notification tools and procedures. In addition, it conducts periodic plan exercises, refining protocols after each event.



*PPL's headquarters, lit in blue, in downtown Allentown, Pa.*

## Compliance and ethics

To fulfill our obligation to shareowners and all others who have a stake in PPL's business and the communities we serve, we (and our contractors) must adhere to high ethical standards, work safely and responsibly, and comply with both the spirit and the letter of all laws, regulations, and rules that govern our business. We recognize that to do otherwise would be costly to our company — not just financially, but also in terms of the strong reputation built by generations of PPL employees.

PPL has established a compliance and ethics program that is founded upon PPL's *Standards of Integrity*. The *Standards of Integrity*, along with our *Vision and Values*, define the way that we conduct our business. They apply in all situations, at all times, guiding the decisions we make and the actions we take.

PPL's *Vision and Values*, along with PPL's *Standards of Integrity* and PPL's *Supplier Code of Conduct* are posted on our website.

### Compliance and ethics governance

The Audit Committee of PPL's Board of Directors (Audit Committee) provides high-level oversight of the program, which applies to PPL Corporation and all of its subsidiaries. In addition to any expedited reports for the most serious allegations as described below, the Audit Committee receives both quarterly reports about the program from the vice president and global chief compliance officer and reports on compliance or ethics issues identified in audits from the vice president-Corporate Audit. These reports include periodic in-person meetings in executive session. The vice president and global chief compliance officer has a dotted line reporting relationship to the Audit Committee, and the vice president-Corporate Audit has a direct reporting relationship to the Audit Committee.

The Board expects its directors and all PPL officers to act ethically at all times and adhere to the policies set forth in the *Standards of Integrity*. Every member of the Board of Directors receives a copy of the *Standards of Integrity*. It is the responsibility of each director to advise the corporate secretary of any actual or potential conflict of interest and any affiliation with public or privately held enterprises, including for-profit and nonprofit entities, which may create a potential conflict of

interest to the company or inconsistency with applicable laws, company policies or values.

The vice president and global chief compliance officer has overall responsibility for PPL's program. The vice president and global chief compliance officer is primarily supported by the compliance leads who are appointed by each operating company or by headquarters. The compliance leads obtain and maintain appropriate certifications and qualifications to perform their functions and have a direct or dotted-line reporting relationship to the vice president and global chief compliance officer.

The vice president and global chief compliance officer chairs the Corporate Compliance Committee (CCC), which is an integral part of PPL's enterprise-wide risk management governance structure and a key component of the program.

The CCC membership consists of corporate and operating company executive leadership with the authority and responsibility to assess the overall effectiveness of the program and to drive enhancements to the program as necessary. The CCC meets quarterly and is supported by the Compliance Working Group (CWG) and Investigation Working Group (IWG).

The CWG, chaired by the vice president and global chief compliance officer, identifies, evaluates and assesses existing and emerging compliance risks and potential issues with existing programs. It then presents its findings to the CCC. The CWG meets once a month and consists of the compliance leads and second-tier leadership with responsibility for supporting the CCC in its oversight of the program. The IWG is also chaired by the vice president and global chief compliance officer. The IWG receives notice of all significant investigations by PPL and its subsidiaries and reviews draft investigation reports. The IWG membership consists of key personnel representing the compliance, audit, human resources and legal functions.

### Employees

Every employee is expected to read, understand and comply with the *Standards of Integrity* and associated company policies. In addition, employees are expected to report any compliance or ethics concerns to their immediate supervisors or via another

appropriate reporting mechanism, including anonymous reporting mechanisms that are in place and publicized to employees. PPL takes any instance of noncompliance seriously. Failure to obey laws and regulations or violations of company policies may result in employee discipline to the extent permissible under applicable law, up to and including termination.

Every employee receives annual training on the *Standards of Integrity*. As part of the training, every employee is required to certify that he or she understands the expectation to report misconduct and understands that PPL will not tolerate any form of retaliation for any report made in good faith. All training is tracked, recorded and reported to executive leadership and the Audit Committee. Targeted communications on key compliance and ethics topics are also issued as needed.

### Reporting and handling of violations

PPL expects employees to ask questions or raise concerns about the application or interpretation of the *Standards of Integrity*. Employees receive regular training and other reminders that the company does not discriminate against, or tolerate any form of retaliation toward, employees who ask questions or raise concerns in good faith.

PPL provides a mechanism known as the "EthicsHelpline" for confidential and, if desired, anonymous reporting of concerns (including accounting issues). PPL's EthicsHelpline toll-free phone number and internet site are available 24 hours a day, seven days a week. PPL's EthicsHelpline, which is managed by an external vendor to promote confidence in confidentiality, is also accessible on the Internet. Reports are made using the EthicsHelpline by not only employees, but also suppliers, customers and other external parties.

Guidelines are in place for promptly responding to allegations of misconduct and include notifying the vice president and global chief compliance officer of the allegations. Issues and trends are identified and reported to the Audit Committee. Allegations are handled and reported to the Audit Committee each quarter, with the most serious allegations being reported on an expedited basis to the chair of the Audit Committee as soon as reasonably practicable after initial intake discussions.



*David Arthur, vice president of federal government relations for PPL, provides an update on legislative issues to employees.*

## Public policy engagement

Laws and policies enacted at the federal and state levels can have a significant impact on PPL and our customers, employees and shareowners. PPL actively encourages public policy that furthers our ability to provide reliable and affordable electricity to our customers and to function safely, efficiently and economically. Our active participation in the public policy arena is appropriate to ensure that public officials are informed about key issues that affect the interests of our customers, employees, shareowners and the communities we serve.

PPL's Public Affairs department is in regular communication with executive leadership and provides an annual report to the Board

on key issues and advocacy positions. Additionally, the Board receives on an annual basis a report of corporate political contributions.

Details regarding PPL's approach to public policy engagement, including compliance, trade association membership, political action committees and donations to tax-exempt organizations are available online on the company's website.

The company's transparent reporting has earned a first-quartile ranking by the CPA-Zicklin Index, which benchmarks the political disclosure and accountability policies and practices of leading U.S. public companies.

PPL does not engage in lobbying or make political contributions

in the U.K. WPD works with trade organizations to collectively represent industry views across a range of areas, including European Union and U.K. legislation, government and regulatory bodies. One of those trade organizations is Energy Networks Association (ENA), which represents the wires and pipes transmission and distribution network operators for gas and electricity in the U.K. and Ireland. ENA's overriding goals are to promote the U.K. and Ireland energy networks ensuring the networks are the safest, most reliable, most efficient and most sustainable in the world.

WPD also conducts regular outreach to its Members of Parliament and engages with Ofgem, the U.K.'s electric utility regulator, on regulations, customer programs and the advancement of low-carbon initiatives.

## Key legislative and regulatory issues

PPL engages with public officials on issues of importance to the company. In 2018, these were our top U.S. legislative and regulatory issues:

- **Physical and cybersecurity** – Policymakers continually are assessing and examining the reliability and security of the bulk power system from both a physical security and cybersecurity perspective. The electricity sector is one of the only critical infrastructure sectors with mandatory and enforceable federal cybersecurity and reliability standards. These standards were developed through the North American Electric Reliability Corporation's (NERC) standards-setting process. Grid owners and operators are involved in developing these standards, which must be approved by NERC and then the Federal Energy Regulatory Commission (FERC).
- **Grid resilience** – The resilience of the bulk power system is a growing issue of policy focus due to the critical importance of the energy sector for national and economic security. PPL supports a definition of resilience that values robust transmission and reliable energy supply, including 24/7 generation resources. The company also supports policies that preserve flexibility of local solutions to optimize utilities' own resource portfolios.

- **Integration of distributed energy resources** – PPL will continue to advocate for funding levels that allow federal agencies to fund additional research and development grants and effectively administer current projects like PPL Electric's Keystone Solar Future Project.
- **Federal infrastructure permitting** – PPL supports federal legislation that creates a more efficient and predictable permitting process for large infrastructure projects and a more transparent and accountable regulatory system that promotes economic development while maintaining necessary safety, environmental and public health protections.
- **State regulatory reform** – PPL actively advocated for legislation that was ultimately adopted by the Pennsylvania General Assembly in 2018. The law gave the Pennsylvania Public Utility Commission (PUC) statutory authority to approve alternative ratemaking mechanisms such as decoupling and performance-based rates. The governor signed the legislation into law in late June. The PUC is in the process of implementing the law's provisions.
- **Pipeline safety** – The Pipeline and Hazardous Materials Safety Administration is finalizing extensive and highly anticipated pipeline safety regulations for gas pipelines. PPL supports pipeline safety and has, for example, proactively taken steps to replace aging gas pipelines with new, more durable materials. The company believes additional efforts to expand safety rules should consider both the benefits and costs to customers.

- **Federal tax reform** – PPL and our industry partners worked closely with the U.S. Department of the Treasury and policymakers to ensure that the new rules implementing the Tax Cuts and Jobs Act allow utilities to continue making the significant capital investments necessary to provide energy reliably and safely at a reasonable cost to our customers while delivering strong returns to shareowners.
- **Net metering** – PPL supports the development of private distributed energy resources with a compensation structure that is fair to all customers.
- **Unmanned aircraft systems** – PPL was one of the first utilities in the country to incorporate unmanned aircraft systems (UAS) into company operations, and the company continues to work with policymakers to broaden the ways in which we can safely and reliably use the technology beyond current restrictions. This includes advocating for a more efficient waiver application process, operating UAS beyond visual line of sight, and encouraging greater cooperation between the private sector and federal, state and local governments so that UAS can be deployed most effectively to assist in emergency and power restoration activities.
- **Pole attachments** – Federal and state regulators continue to examine at what cost and in what manner telecommunication companies and other entities may attach their equipment to poles owned by utilities. PPL advocated that any new rules ensure that attachers operate in a safe manner, do not unfairly shift costs to utility customers and do not negatively impact electric service reliability. In the fall of 2018, the PUC issued a proposed rulemaking to reverse preemptive Federal Communications Commission jurisdiction over pole attachments. PPL Electric submitted comments supporting the PUC's efforts to assert jurisdiction over pole attachments. The rulemaking is still pending review.
- **Low-income Home Energy Assistance Program** – PPL supports the Low-income Home Energy Assistance Program and works with federal policymakers to secure adequate funding for this important program, which provides assistance for our most vulnerable customers.



“As we adapt our grid to new technologies and new customer expectations, new rate structures will help us keep it strong and secure for all customers.”

– Nikki Jones, director-  
State Government Relations for PPL Electric

## Alternative ratemaking structures provide flexibility to adapt

The utility industry is changing and evolving. As a result, the way utilities recover the costs of investments to strengthen the grid and benefit customers needs to change as well.

That’s the basic reasoning behind Pennsylvania Act 58, legislation that gives utilities the option to propose different ratemaking structures. The bill earned strong approval from the Pennsylvania House and Senate and was signed into law in 2018 by Gov. Tom Wolf.

“As we adapt our grid to new technologies and new customer expectations, new rate structures will help us keep it strong and secure for all customers,” said Nikki Jones, director-State Government Relations for PPL Electric.

Traditionally, the amount of revenue utilities earn has been tightly linked, or “coupled,” to the amount of energy customers use.

Today’s customers are becoming more efficient and are using more solar and other distributed generation resources. Because of these trends, PPL Electric expects overall energy sales to decrease. That means PPL Electric is likely to receive less revenue to invest in grid reliability, resiliency and modernization to meet customers’ changing needs.

One possible ratemaking structure is called decoupling. Decoupling separates, or “decouples,” utility revenues from electricity sales. It breaks the traditional link between how much power a utility sells and how much revenue it collects. A form of electric decoupling is already working in 18 states.

The new law also enables performance-based rates, which would help hold utilities accountable for reliability and other key performance measures on behalf of customers.

PPL Electric supported this legislation, and Gov. Tom Wolf signed the bill into law shortly after Senate approval in June.



# Drive best-in-sector operational performance

Excel in safety, reliability, customer responsiveness and energy efficiency while maintaining a culture that cultivates innovation



**100,000+**

Number of students reached with important public safety messages annually



**35%**

Reduction in interruptions of electric service for LG&E and KU and PPL Electric customers since 2010.



**45%**

Reduction in outage duration for WPD customers since 2011-2012



**\$212M**

Amount spent on goods and services provided by diverse suppliers





## PPL's utility companies deliver powerful messages about public safety

Educating children at an early age about electrical and natural gas safety creates lifelong impressions and positive behaviors.

That's why PPL's utility companies invest in numerous initiatives to teach children about the potential hazards related to electricity and natural gas.

Our efforts include using mascots, plays, interactive web-based games and virtual reality demonstrations to share safety messages in a fun way.

For example, LG&E and KU's electric safety mascot, Louie the Lightning Bug, reaches thousands of children and adults with key messages about safety at community and special events throughout the year.

The company recently launched a new K-6 curriculum-based

natural gas and electricity safety education program for schools. The program includes booklets, lesson plans for teachers and a website that features videos, games and a safety checklist for students, teachers and families.

In Pennsylvania, PPL Electric's theatre-based program "Safety Detectives in Hot Pursuit" has reached more than 60,000 students at nearly 200 schools.

"We're focused on getting our safety message to children early in their lives and continuing to reinforce it as they grow," said Mark Santayana, manager of Public Safety for PPL Electric. "The idea is to show and tell them something they'll remember for the rest of their lives. And our hope is that they share it with their parents, siblings and friends."

WPD has also taken the safety message to the stage, using an

interactive play for primary school children. WPD's safety superhero, Pylonman, joins in on the fun, helping to "rescue" students from unsafe situations.

As part of WPD's eight-year business plan, the company has a commitment to reach 50,000 primary school age students annually.

The company's award-winning public safety awareness program also includes an interactive website, the Power Discovery Zone, and virtual reality videos that emphasize the importance of safety.

*Pictured: A young student tries out WPD's new virtual reality experience, which features videos that emphasize the importance of safety. It's just one of the numerous initiatives PPL's utility companies are using to teach the public about the potential hazards related to electricity and natural gas.*

# Safety

One of PPL's primary goals is to maintain a work environment that promotes the health and safety of our employees and the communities where we work and live. No job is too important or so urgent that precautions, laws or regulations concerning health and safety can be bypassed. Our goal is simple: zero accidents or incidents adversely affecting employees, contractors or the public. All of our operating companies have robust safety policies and procedures. Employees own the concept of health and safety at a grassroots level, and that commitment to health and safety enables employees to hold each other accountable while sharing good practices. We strive for continuous improvement, engaging with others in our industry and elsewhere to learn and to incorporate best practices that can enhance our existing programs.

## Injuries and accidents

Safety is a high priority at PPL — something we consider an obligation to our employees, contractors and the public. That attitude has created a strong accident-prevention culture through all our operating companies. Employees are focused on reducing risks to eliminate workplace accidents. Even with extensive training, however, accidents can occur. The chart below outlines our safety performance. The company reviews every incident and takes the necessary corrective measures to prevent as many incidents as possible.

2018



**23,602,105**  
Total hours worked



**0.13%**  
Lost-time incident rate  
with 1.18% recordable incident rate



**Zero**  
Work-related employee fatalities



## Safety programs

To reinforce PPL's ongoing commitment to safety, we carried out programs throughout the year focused on safety and health performance, near miss reporting, emergency preparedness, vehicle safety checks and slip, trip and fall prevention. Some highlights include:

### In Kentucky, LG&E and KU:

- Hosted more than 1,200 employees and business partners, including the Kentucky Labor Cabinet Secretary and Deputy Secretary, the Kentucky Occupational Safety and Health commissioner and representatives of the Kentucky Public Service Commission, International Brotherhood of Electrical Workers Local 2100 and the United Steel Workers, for LG&E and KU's annual Safety Summit.
- Introduced the "Safety: Why I care!" campaign to remind employees about what should motivate them to work safely.
- Implemented an enhanced program to increase safety awareness among administrative and corporate employees.
- Launched a safe-driving initiative that includes mandatory online training and an employee pledge.

### In Pennsylvania, PPL Electric:

- Continued the highly successful bargaining unit safety advocate program by sending two more groups of workers into the field to observe their peers. To date, 48 workers have participated in the program.

- Instituted an injury prevention campaign focused on preventing back and shoulder injuries.
- Hosted the company's third annual Safety Summit, which attracted about 200 workers and emphasized the importance of establishing and maintaining sharp focus on job tasks.

### In the U.K., WPD:

- Held Safety Week, in which line managers delivered a series of talks or presentations to their teams or held individual discussions about dedicated daily safety messages.
- Rolled out a program of Well Point kiosks across all depots. The kiosks enabled staff to discover important health information such as weight and body mass index, risk of cardiovascular disease, body fat percentage, blood pressure, heart rate and heart age. The kiosks then provided employees with advice on improving their lifestyle to address or improve upon any issues found.
- Completed approximately 100 behavioral safety workshops at WPD depots.
- Completed an inaugural WPD trainee safety conference at which WPD Chief Executive Phil Swift highlighted his personal commitment to safety.
- Undertook an independent Climate Safety Survey of WPD staff, the results of which will be used to enhance safety in future years.



Our ultimate goal is to ensure that we all remain safe and healthy at home and on the job and return home to our families safely at the end of each day.

**Components of our program include:**

**Hazard assessment and mitigation**

Aggressively identify, assess and mitigate hazards of all types before they cause injuries.

**Incident investigation and reporting**

Perform a root-cause analysis, meaningful investigation and detailed report after the failure of any safety or health control that results in an incident or a near-miss/close call.

**Employee involvement**

Capitalize on the company's most valuable resource, employees, by actively creating and facilitating opportunities to become involved in loss-prevention efforts.

**Job briefings**

Ensure that employees participate in a job briefing prior to the start of any work related to natural gas or electricity operations.

**Compliance**

Ensure that all business areas and employees comply with local, state and federal regulatory requirements.

**Vehicle incident prevention**

Ensure employees have the resources, skills and knowledge necessary to drive safely and defensively in order to reduce the number of vehicle incidents.

**Business partner relationships**

Foster better communication and closer working relationships between employees and business partners to strengthen the company's safety culture.

**Near-miss/close-call reporting**

Report all incidents that could have resulted in injury, so hazards can be addressed to prevent similar incidents in the future.

**Empowerment**

Seize the freedom, responsibility and accountability for controlling and correcting unsafe work without repercussions.

**Communication**

Foster reciprocal communication that will support safe work habits and a hazard-free environment.

**Leadership**

Demonstrate the courage and knowledge to correct unsafe actions, ensure the safety and well-being of co-workers and promote safety as the most important thing we do.

**Health and wellness**

Actively pursue opportunities to meaningfully incorporate health and wellness as a component of safety.

**Sharing best practices**

Engage with outside groups to learn best practices, with discussions covering areas such as accident prevention, emergency response, fire safety and operational health and safety.

Our commitment to safety also extends to our contractors. Stringent safety and health requirements are contractual obligations as outlined in these health and safety requirements.

“Getting the chance to meet representatives from more than 80 local and diverse businesses from our service territory helps us further expand the diversity of the businesses that provide us with critical products and services.”

— Jenn Brodhag, manager of supply chain diversity program for PPL Electric



## Supply chain

Relationships with contractors and suppliers are vital to PPL’s successful operations. PPL’s supply chain organizations negotiate and secure contracts to procure materials, labor and services necessary to support the business and infrastructure investment.

Most purchase orders and contracts issued by PPL use a qualified supplier. PPL’s supply chain teams maintain lists of qualified suppliers and award business to approved suppliers based on a number of factors, including previous business dealings, competitive prices, and the quality of materials and services.

In addition, we require our suppliers and contractors to observe our standards of business and professional and personal ethics when bidding or providing materials or services to PPL. In 2018, the company implemented an enterprise-wide Supplier Code of Conduct for all PPL Corporation subsidiaries.

The principles and expectations in this Supplier Code of Conduct apply to anyone supplying goods or performing services for or

on behalf of PPL. In addition, they apply to all activities undertaken in connection with the provision of those goods and services. We also expect our Suppliers to extend these standards to their own supply chain with respect to goods and services provided to us.

Accordingly, PPL reviews the safety and environmental performance of its business partners and incorporates compliance requirements in purchase orders and contracts. The value PPL places on diversity carries over to the people from whom the company purchases goods and services.

PPL and its business units actively reach out to find diverse businesses – including those owned by minorities, women and veterans. PPL Electric, LG&E and KU host annual supplier networking events to attract business leaders who will help expand the diversity of our supplier base.

*Jenn Brodhag, manager of supply chain diversity program for PPL Electric, speaks to Tom Tacconelli of Danella Construction Corporation, a local supplier headquartered in Pennsylvania.*

### Supplier diversity



**\$3.2 billion**

Total corporate spend on goods and services in 2018



**\$1.7 billion**

Total corporate spend on locally based suppliers



**52%**

Of corporate spend on locally based suppliers



**\$212 million**

Total corporate spend on diverse suppliers



## Reliability

Reliability encompasses a number of operational aspects, including ongoing maintenance and oversight of grid equipment and power lines that can be affected by everything from weather to animals.

A combination of investments in smart grid technology, power line upgrades, replacement of poles and other aging equipment, and comprehensive vegetation management have paved the way for continued improvement in reliability.

PPL's utilities continue to use technology to work smartly and more efficiently, whether it's using big data to help drive improvements or studying how best to approach the growing appetite for distributed energy resources like solar.

**LG&E and KU** continued to focus on long-term reliability improvements in 2018. As a result of grid investments in recent years, customers are experiencing stronger reliability. In the last eight years, for example, LG&E and KU have seen interruptions in electric service decline by 35 percent. Additionally, when outages do occur, they are now 16 percent shorter in duration on average compared to 2010.

Ongoing planned system improvements over the next five years are projected to further reduce the frequency of outages by 21 percent and duration of outages by 18 percent, compared to average historical system performance since 2010.

For **PPL Electric**, investments in technology significantly reduced the number of customers affected by outages of five minutes or longer in 2018, despite an overall increase in storm activity across the service territory.

PPL Electric continued its effort on increasing automation on the higher-voltage system and work to replace aging equipment.

The company also installed approximately 114 motor-operated switches on the higher-voltage transmission grid. These devices automatically restore power to customers and prevent sustained interruptions. As a result, more than 43,800 customers experienced a momentary outage instead of a sustained interruption, saving customers 5.5 million minutes they otherwise would have been without power.

PPL Electric also developed a dashboard to identify at-risk equipment and triage replacements based on risk factors such as age, condition and structure type. The goal is to replace high-risk equipment throughout 2019 to reduce sustained interruptions caused by wood-related failures.

For **WPD**, reliability improvements since the 2011-2012 regulatory year have resulted in a 27 percent reduction in customer interruptions and a 45 percent reduction in outage duration.

When interruptions did occur in 2018, 88 percent of WPD customers had their power restored within one hour of a high-voltage fault.

Work to improve the reliability and resilience of the grid in the U.K. included installing flood defenses at 48 substations, clearing trees from more than 480 miles of overhead lines in 2017-2018 to ensure resilience during storms, and improving substation battery life to ensure viability during major, network-wide power loss.

### Reliability highlights

35%

Reduction in interruptions of electric service for LG&E and KU customers since 2010

5.5M

Fewer interruptions in 2018 compared to 2008 for PPL Electric customers

88%

Percent of WPD customers who have their power restored within one hour of a high-voltage fault

## Vegetation management

Millions of people served by PPL's utilities depend on having reliable power for their homes and businesses. Effective vegetation management along high-voltage transmission lines is a critical part of maintaining that reliability. Our vegetation management program is designed to promote the safe and reliable operation of the electric grid while making sure that we are sensitive to the concerns of property owners and our obligations to electricity customers. We work with conservation, land management and environmental groups to advance common goals of electric reliability and environmental stewardship.

Trees and other tall vegetation need to be kept away from power lines. If they get too close, power outages can result. Tree-related outages can potentially affect thousands of customers for extended periods of time. Keeping overhead power lines clear of limbs and brush also enables our crews to detect and repair issues that impact service during storms. Tree interference also poses potentially significant safety risks to our employees and the public.

PPL's utilities all conduct tree clearance trimming throughout their service areas on a consistent and planned cycle to maintain reliable service. All the utilities use integrated vegetation management practices, which reduce the need for pesticides, promote healthy ecosystems, and provide measurable results such as greater natural species diversity along rights-of-way and better control of invasive species.





## Customers seeing benefits from distribution automation

More than a year into the project, LG&E's and KU's investments in distribution automation have already helped prevent more than 16,000 electric service interruptions for customers – saving more than 6.2 million minutes when customers would have previously lost power.

The goal of the company's \$112 million Distribution Automation Project is to install more than 1,400 reclosers on electric distribution circuits across the LG&E and KU service territories. These small circuit breakers, strategically placed, can be used to isolate outages to as few customers as possible when problems occur, quickly restoring power to others to prevent sustained outages.

The company began installing electronic reclosers in July 2017. Since then, crews have installed about 400 of the devices on LG&E and KU electric distribution circuits serving more than 180,000 customers.

"In order to maximize our benefits for the company and our customers, we're focusing on electric distribution circuits that provide the most improvement in distribution reliability and will benefit the largest number of customers," said Jason Jones, manager of Distribution Automation.

Additionally, the project team will implement and integrate advanced management systems to communicate with these new reclosers. The first phase of system integration involves the launch of Distribution Supervisory Control and Data Acquisition, or DSCADA, which will then be integrated with the company's Network Management System in 2019.

As the project continues, the company will implement and integrate advanced management systems through 2019 that can "talk to" or remotely monitor and control the electronic reclosers.

This ability to centralize and automate the monitoring and remote operations of the reclosers by the Distribution Control Center – coupled with the expertise of crews working in the field and making repairs – means outages will occur less frequently, and when they do occur, power will be restored more quickly than before.

“To maximize our benefits for the company and our customers, we’re focusing on electric distribution circuits that provide the most improvement in distribution reliability and will benefit the largest number of customers.”

– Jason Jones, manager of Distribution Automation for LG&E and KU

# Advance a cleaner energy future

Encourage responsible stewardship in partnership with our customers and stakeholders to have a sustainable environmental impact



A team completes work on LG&E and KU's universal solar facility at the E.W. Brown Generating Station near Harrodsburg, Ky.

At PPL, we know we must identify, understand and manage risks and opportunities to remain successful. This includes risks and opportunities associated with climate change and the transition to a cleaner energy future. Our strategy group evaluates different options to inform business strategy, using modeling and input from our internal experts and third parties as needed. These assessments are reviewed with senior management and our Board on an ongoing basis. We continue to refine our process to identify and quantify risks and opportunities associated with the physical impacts of climate change and the transition to a more energy-efficient and lower-carbon economy to better inform our

enterprise risk management, business planning and strategic focus.

As a result of strategic restructuring, investments in recent years and additional measures to reduce emissions, PPL's overall CO<sub>2</sub>e emissions dropped by 52 percent from 2010 to 2018. In addition, our portfolio is now heavily focused on electricity delivery, with more than 80 percent of our 2018 earnings driven by delivery operations.

Overall, our strategy going forward is to continue to grow our

non-carbon-based transmission and distribution portfolio, economically reduce the carbon intensity of our generation portfolio, increase our investment in renewables and distributed energy resources, and invest in new technologies to make the grid more reliable, dynamic and resilient. An important component of this strategy is to continue to keep ourselves well-informed about the expectations of our regulators and to advocate for regulatory structures that support the transformation of our industry as we successfully did in Pennsylvania last year ([see page 25](#)).



Goal to cut the company's carbon dioxide emissions from 2010 levels by 2050



Approximate megawatts of coal capacity retired in Kentucky



Number of solar panels in LG&E and KU's utility-scale solar photovoltaic facility



Number of electric vehicle users who participated in Electric Nation, a two-year trial of home charging in the U.K.



Millionth of a metric tonne of CO<sub>2</sub>e per dollar revenue

## Investing in innovation

To support the growth of distributed energy resources, including solar and energy storage solutions, PPL acquired Safari Energy in 2018.

Founded in 2008, Safari Energy is a leading provider of solar energy solutions for large commercial customers in the U.S., having developed more than 200 solar energy projects from New York to Hawaii.

The acquisition offers PPL an opportunity to help advance a cleaner energy future; to support the growth of distributed energy resources, including energy storage; and to gain additional experience with technologies that will play a bigger role in shaping the future energy grid.

PPL also hired industry veteran Vijay P. Singh to lead PPL's involvement in the evolving distributed energy resource space and to complement the Safari Energy team. Singh previously served as executive director of Renewable Energy Development and Energy Storage for NextEra Energy Resources.



*The Whalers Village solar project in Lahaina, Hawaii, is among the 200 solar generation systems installed by Safari Energy.*

## Climate change

Our actions on climate change include conducting detailed assessments of our climate-related risks and opportunities and incorporating the outcome of those assessments into our business strategy and business planning. An updated detailed listing of climate-related risks and opportunities, the assessed impacts, and our approach with respect to each is available in our 2018 CDP report. Our management approach includes actions to reduce transition risks, including reducing the carbon footprint of our businesses, using innovative approaches to integrate more distributed energy resources in Pennsylvania and the U.K., and investing in lower-emitting generation in Kentucky consistent with Kentucky's lowest reasonable cost requirements. We are also addressing physical risks through climate adaptation actions such as investing across our transmission and distribution operations to mitigate weather-related impacts on our facilities and to make the grid more reliable and resilient.

### Carbon reduction goal

PPL's voluntary corporate goal is to reduce CO<sub>2</sub> emissions 70 percent from 2010 levels by 2050. The company expects to achieve the reductions through a variety of actions. These include replacing Kentucky coal-fired generation over time with a mix of renewables and natural gas while meeting regulatory requirements to provide least-cost and reliable service to customers. Actions also include taking steps across PPL's U.S. and U.K. operations to improve energy efficiency, reduce greenhouse gas emissions from substations and reduce vehicle fleet emissions.

The U.K. has enacted binding carbon reduction requirements that are applicable to WPD. Under the U.K. law, WPD must purchase carbon allowances to offset emissions associated with WPD's operations such as fleet vehicle emissions. Additionally, WPD has adopted a voluntary goal to reduce its business carbon footprint 5 percent from 2012-2013 levels by 2023.

### 2017 Climate Assessment

In 2017, PPL conducted a detailed assessment of how future requirements and technological advances aimed at limiting global warming to 2° Celsius over pre-industrial levels could potentially impact PPL.

In conducting the assessment, PPL considered the recommendations of the Task Force on Climate-Related Financial Disclosures, also known as TCFD. The assessment examined several policy and technology scenarios, including a scenario consistent with limiting global temperatures to an increase of 2° Celsius over pre-industrial levels.

Under each policy scenario considered, including the 2° Celsius scenario, PPL's analysis indicated carbon dioxide emissions from the company's Kentucky generation assets would be expected to decline 45-90 percent from 2005 levels by 2050.

Based on this assessment and additional analyses we have conducted as part of our enterprise risk management process, we conclude that the financial risk posed by our carbon-based generation assets is minimal due to Kentucky's regulatory structure, our extensive experience within that structure, and the relatively small part our carbon-based assets constitute of our overall asset portfolio. By maintaining a thorough understanding of regulatory expectations, we can continue to operate in a manner that is economically justifiable to our Kentucky regulators, to alter our Kentucky operations as may be required, and to recover our costs and a return on our investments.

LG&E and KU submit an Integrated Resource Plan to Kentucky regulators approximately every three years, evaluating the best way to serve customers under a wide range of scenarios (varying customer demand, fuel prices, environmental costs and other factors). The most recent plan was submitted in October 2018. Going forward, PPL will more closely link the timing of its climate assessments to LG&E and KU's Integrated Resource Plan.

## WPD climate change adaptation plan

Since producing its second Climate Change Adaptation Plan in 2015, WPD has continued to work with the University of Newcastle to complete additional research on the effects of climate change.

The joint research effort has identified the main climate change risks that could impact the company's distribution network. These include extreme weather events, flooding and significant temperature changes.

Informed by the U.K. Climate Projections, WPD has established plans to mitigate climate change on its network.

In addition, WPD has committed to reducing its business carbon footprint 5 percent from 2012-2013 levels by 2023. In 2018, the total business carbon footprint was reduced from 92,918 tCO<sub>2</sub>e to 85,528 tCO<sub>2</sub>e.

The company's climate adaptation efforts include:

- Taking steps to prevent substation flooding
- Developing the capability to respond to flood events using portable equipment and mobile pumps to improve their resilience to lightning
- Amending overhead line design standards to account for a potential rise in temperature

WPD regularly reports to regulators regarding climate adaptation and progress towards reducing its business carbon footprint. Details regarding WPD's environmental performance can be found online at [www.westernpower.co.uk](http://www.westernpower.co.uk).

## Managing resources, addressing environmental impact

PPL has a longstanding commitment to carry out all of our business activities in ways that preserve and promote a clean, safe and healthy environment. We have invested in environmental upgrades at PPL power plants, carbon-free generation projects and programs to encourage energy efficiency.

### Expanding cleaner energy options

In addition to operating two hydroelectric facilities, Ohio Falls and Dix Dam, since the 1920s, **LG&E and KU** support other low-carbon generation options:

- The companies' E.W. Brown Generating Station houses Kentucky's largest utility-scale solar photovoltaic facility. The solar facility features more than 45,000 solar panels on approximately 50 acres. The panels produce 19,000 megawatt hours of energy, enough to power more than 1,500 homes based on a usage of 1,000 kilowatt hours per month. The company makes data from the project available to the public, allowing individuals to view energy production in real time.
- LG&E and KU recently completed upgrades at its hydroelectric power plants, increasing the amount of clean, renewable energy at Ohio Falls by 25 percent and at Dix Dam by 38 percent.
- LG&E and KU offer a Solar Share program, which gives residential, business and industrial customers the opportunity to share in local solar energy and receive credits on their monthly bills. Under the program, LG&E and KU will build, own and operate a regional Solar Share Facility. Once constructed, the facility will generate energy that then helps power the community. Customers participating in Solar Share will receive a credit on their monthly bill for the amount of solar energy produced based on their subscription. The first section within the Solar Share program is 100 percent subscribed and the utility is now taking enrollments for the second section.



*The Ohio Falls hydroelectric plant was recently upgraded, increasing the amount of clean energy generated by 25 percent.*

- The companies also collaborate with EPRI on an energy storage research and demonstration site to allow utilities to develop, test and evaluate the potential benefits and operating needs of large-scale battery technologies. The site includes testing bays for up to 3 megawatts of energy storage.

In Pennsylvania, **PPL Electric** is making investments to expand customer access to renewable and distributed resources:

- The company participates in a statewide alternative-energy portfolio standard. From June 2017 to May 2018, alternative power sources comprised 14.7 percent of the power PPL Electric bought for customers who had not chosen a competitive supplier. This included 6.5 percent from solar, wind and hydropower energy sources. The projected renewable energy obligation for June 2018 through May 2019 is 15.2 percent.

- PPL Electric is working with multiple research partners on the Keystone Solar Future Project. As part of the three-year, \$10 million program, PPL Electric will design, build and pilot new tools to integrate distributed energy sources – such as rooftop solar panels – into its grid. Launched in 2017 with a \$3.1 million grant from the U.S. Department of Energy, the project plans to leverage PPL Electric's existing smart grid infrastructure to develop a Distributed Energy Management System capable of reliably and safely integrating more solar power on the grid.
- PPL Electric also has launched a new Renewable Energy Connection website, making it easier and faster for customers to apply to connect solar panels and other generation systems to PPL Electric's grid.

**WPD** participates in the U.K. Network Innovation Allowance and Competitions, which has launched projects that test innovative methods to enable the widespread adoption by customers of low-carbon technologies. This includes technology such as solar panels, heat pumps and electric vehicles. Projects underway in 2018 include:

- A review, in collaboration with National Grid, of the whole electricity system across a license area. The 12-month project tested how the transmission and distribution systems interacted under different future energy scenarios and how this may affect investment options. The area was selected for the project due to the abundance of renewable resources in the region and how these may exceed the ability of the network to absorb their energy beyond 2020.
- Electric Nation, an innovative two-year trial to investigate the impact that home charging of electric vehicles has on distribution networks, achieved its target of recruiting 700 electric vehicle users to participate in a trial to ensure the U.K. can charge electric vehicles at peak times as the numbers of electric vehicles rise.
- OpenLV, a research project testing an open software platform in electricity substations, will monitor substation performance and electricity demand. WPD has installed four pilot data collection units and is working to identify up to 60 additional sites. The data collected by the units will provide information to utilities about network capacity, helping to identify ideal locations for the installation of electric vehicle chargers and other services.
- The Carbon Tracer App, which allows customers to view the composition and carbon intensity of their electricity supply. With growing customer awareness, the project could lead to increased engagement with demand-side management programs that lead customers to adjust their energy usage to support reliable network operation. WPD partnered with the Carbon Trust to develop the app.



*Customers review a mobile phone app as part of OpenLV, a research project testing an open software platform in electricity substations that can monitor substation performance and electricity demand.*



The Ohio River.

# Conserving and protecting water

PPL carefully manages the water it uses and monitors the impact of waste-water discharged into waterways. No water is sourced from regions with high or extremely high baseline water stress. In fact, PPL's only operations with any significant water usage are the power generation operations in Kentucky. All but one of LG&E and KU's power plants are located on the Ohio River, which is not adversely affected by drought. The National Oceanic and Atmospheric Administration predicts the Ohio River's water levels daily and has never required LG&E and KU to reduce non-hydro generation due to river temperature or water volume issues. There is only one power plant, the Ohio Falls plant, that could be impacted by low water volume because it is a run-of-river dam. However, that plant accounts for only about 1 percent of the company's power generation.

The company supports programs that protect waterways and the ecosystems that depend on them in the service areas where the utilities operate. PPL's utilities collaborate with a variety of stakeholders and state agencies to ensure that watersheds and reservoirs meet both the needs of the utilities and other stakeholders, including the public.

For example, KU's Dix Dam hydroelectric plant and the adjacent Herrington Lake are public recreation areas and serve to provide water for the city of Danville. The facility staff works with the Kentucky Department of Fish and Wildlife and Trout Unlimited to improve fish habitat in the area and the Dix River, which is connected to the lake. The staff also works with the Herrington Lake Conservation League, which holds local volunteer events for shoreline cleanups and other public activities.

LG&E and KU undertake voluntary initiatives at their power plants located on the Ohio River, including conducting riverbank cleanup and providing parking facilities for fishermen and hikers.

LG&E and KU have greatly reduced the volume of cooling water withdrawn from the region's watershed by utilizing closed-cycle cooling instead of once-through cooling at its generating plants. Each facility also has a Groundwater Protection Plan, a Stormwater Best Management Practices Plan, and a Spill Prevention Control and Countermeasure plan that facilitates the safe storage of chemicals and oils on site. Proper secondary containment and weekly tank inspections ensure these chemicals remain out of the watershed and groundwater.

The companies also continue to decrease consumptive water use as they improve power plant efficiency and transition to dry-ash handling at remaining coal-fired power plants in Kentucky. LG&E and KU also pay consumptive use fees to cover the costs of reservoir projects and storage space designed to benefit all users and maintain adequate river levels during low-flow periods.



**88.9%**

Amount of water recycled and reused



**0.80%**

Percent impact of water withdrawn (reflects plant with highest impact of withdrawal compared to waterbody size)

For complete details on water management, see Appendix [page 84](#).

**Reducing air emissions**

We invest in technology, facility upgrades, renovations and new construction projects that reduce emissions. We are economically transitioning our power generation from coal to lower-emissions sources, such as natural gas and solar. And we are adding lower-emission vehicles to our own fleet, including electric and natural-gas vehicles.

In January 2018, PPL announced a goal to cut the company's carbon dioxide emissions 70 percent from 2010 levels by 2050.

LG&E and KU, whose power generation capacity includes a mix of coal, natural gas and renewables, have also completed a multi-year, \$2.8 billion project to add environmental controls to four of the company's coal-fired power plants to further reduce emissions and improve operations.

As part of LG&E and KU's ongoing emissions reduction efforts, the companies use GPS and fleet monitoring software to control idling and optimize routes for their vehicle fleet. The utilities continue to seek out opportunities to use plugin hybrid electric vehicles when costs are favorable.

Since 2015, PPL Electric has been working to reduce Sulfur Hexafluoride (SF6) gas emission through predictive analytics.

When not managed properly, circuit breakers and other equipment can leak SF6, a greenhouse gas. The company's Transmission and Substation System Engineering, Asset Strategy and Data Analytics teams created a strategy to predict failure rates of circuit breakers so they could be proactively replaced or repaired before SF6 is released. Through the teams' collaboration, the utility was able to reduce SF6 leakage rate by approximately 95 percent since 2011.

PPL Electric has converted 30 percent of their bucket trucks to electric lift bucket trucks, which reduces idling and diesel fuel usage. The company's goal is to equip all 277 bucket trucks with the technology by the end of 2025.

In the U.K., WPD is an ISO140001 certified organization. The company conducts annual environmental awareness training for employees throughout the organization and tracks key performance indicators related to environmental outputs such as waste management, energy use, fleet vehicle fuel use, reportable environmental incidents and SF6 emissions.

As part of WPD's efforts to reduce their overall carbon footprint by 5 percent, the company has a number of initiatives around making their fleet vehicles cleaner and more efficient.

**Waste management**

PPL has high standards for managing waste from our operations. In keeping with the company's commitment to advance a cleaner energy future and encourage responsible stewardship, we seek innovative solutions and opportunities to reduce, reuse and recycle waste materials.

Coal ash is one of the residuals of coal power production. Ash production has decreased 28 percent from 2013 to 2018 due to the closure of coal-fired units and the increased use of natural gas generation. LG&E and KU continued to make progress in 2018 on more than \$845 million in environmental upgrades as part of a five-year project to cap and close ash ponds at active and retired coal-fired plants and to transition to dry handling of coal-combustion residuals. For complete details on coal ash handling, see Appendix on [page 84](#).

PPL Electric and LG&E and KU completed a major effort in the 1980s and 1990s to remove known Polychlorinated biphenyls (PCBs) from the system. All new transformers contain mineral oil and are classified as non-PCB.

Other waste streams include e-waste, cardboard, municipal trash, scrap metals and wooden utility poles.

In the U.K., WPD has achieved its goal to reduce the amount of waste sent to landfills by 20 percent over 2015-2017 levels, and 5 percent annually after that.

**Waste management**



WPD's annual percentage decrease target of waste sent to landfills



Percentage of gypsum byproduct that is beneficially reused by LG&E and KU



Percentage of total waste that is recycled by WPD



Percentage of transformer oil recycled by PPL Electric



Percentage of wooden poles recycled by PPL Electric

## Biodiversity initiatives

All facets of the daily operations of electric power companies – from water discharges and atmospheric emissions to transmission line rights-of-way – can potentially affect ecosystems. We take a lot of steps to ensure the environment is protected while work is being done on the electrical system, especially in sensitive resource areas.

We routinely relocate structures and access roads to avoid negatively impacting sensitive areas like wetlands, waterways and critical habitat for rare, threatened or endangered flora and fauna.

Across our service territories in Kentucky, Pennsylvania and the U.K., our teams work with various partners to protect biodiversity. Some highlights include:

### In Kentucky, LG&E and KU:

- Have partnered with Kentucky Department of Fish and Wildlife Resources for more than 20 years as part of a comprehensive Avian Protection Plan and efforts to promote native vegetation growth in Kentucky.
- Have been a corporate sponsor of the Ohio River Sweep since 1995. Employee volunteers join thousands of people across a multi-state region each year to remove litter and debris from the banks of the Ohio River.
- Offer one-year grants, ranging from \$500 to \$5,000, for urban, suburban or rural projects in forests and parks and along parkways or roadways that meet program objectives.
- Support research intended to help boost the population of the endangered Indiana bat. The company installed 10 utility poles several years ago that are used as artificial roosting structures at Fort Knox. The project is a coordinated partnership that includes Copperhead Environmental Consulting, the U.S. Fish and Wildlife Service, Fort Knox and LG&E and KU.

### In Pennsylvania, PPL Electric:

- Has adopted a comprehensive Avian Protection Plan to protect birds from coming in contact with electrical equipment and power lines.
- Partners with the Pennsylvania Game Commission on projects to protect birds of prey such as peregrine falcons (pictured), osprey and eagles.
- Has conducted studies and installed habitat protection for the eastern small-footed bat.
- Gives trees to county and municipal parks, environmentally focused groups and schools through its Community Roots program.
- Is a member of the Edison Electric Institute Pollinator Working Group, which hopes to play a major role in managing pollinator habitat and protection initiatives (see more details on [page 43](#)).

### In the U.K., WPD:

- Provides support to communities across the network area with the aim of encouraging energy conservation, promoting recycling initiatives and enhancing the landscape for wildlife through its Keen to be Green program.
- Plants 5,000 native trees annually across its network area. It also responds to ad hoc requests from a range of organizations and works with nationally recognized charities including the Wildlife Trusts and the Conservation Volunteers.
- Maintains an invasive species management plan to ensure appropriate measures are in place to minimize the spread of any invasive species present on work sites to avoid disrupting local biodiversity.
- Works closely with local ecologists to ensure best practices are followed and habitat enhancement is assured.



## Helping our customers go green

Our companies offer a variety of services to help customers save energy, calculate their indirect greenhouse gas and carbon emissions and adopt renewable energy. Our customer programs use advisory and educational resources from our team members, rebates and incentives, and technology, such as meters and online tools.

Examples of program offerings include:

- Conservation/home energy performance monitoring
- Low-income weatherization
- High-efficiency lighting
- Heating, ventilation and air conditioning test and tune up
- New construction advisory services
- Load management options with financial incentives to reduce demand during peak hours
- Appliance removal with incentives for replacement with EnergySmart appliances
- Smart energy profiles and dashboards for monitoring usage and performance
- Student energy efficiency education

For more details on energy efficiency programs and savings, see [page 54](#).



LG&E and KU educate customers about efficiency at community events, such as this home show, throughout the year.



“We are always looking for the best ways to balance the needs of our customers for reliable and affordable electricity with our goal to avoid and minimize potential negative impacts on the environment.”

— Jeff Luzenski, senior environmental professional for PPL Electric

## Powering pollinator research

Birds do it and bees do it. Oh, and butterflies, too. Pollination that is.

About three quarters of our major food crops require pollinators, according to the U.S. Department of Agriculture.

As a utility managing more than 50,000 acres of land in right-of-way easements under our power lines, PPL Electric is in a unique position to help provide a pollinator-friendly habitat. The company is currently conducting research to find the best plants for both pollinators and power lines.

Over the course of several years, Jeff Luzenski, senior environmental professional for PPL Electric, has been supporting an internal research project to develop a cost-effective seed mix of native, pollinator-friendly plants that can be used during restoration of transmission line and substation projects.

In addition to providing an ideal habitat for pollinators, the right mix of native plantings would save costs by potentially requiring less vegetation management and treatment. Lower-profile plants also have the benefit of providing enhanced visibility when inspecting power lines.

“That’s a win-win-win for pollinators, the company and customers,” Luzenski said.

The research project began in 2014 when the company planted a mix of grasses and wildflowers that are native to the eastern U.S. under portions of the newly rebuilt Susquehanna-Roseland line.

The initial plantings have proven to be a success, requiring little maintenance over the past five years.

The team expanded the research project in 2017, planting another test garden at its Walbert Conference Center. The easily accessible site facilitates data collection.

Researchers are collecting baseline data to evaluate the performance of the seed mixes. This includes data on soil health, resistance to invasive plants, overall growth and performance, damage by wildlife and the effectiveness of herbicides.

The final seed mix that is selected will be used whenever land is disturbed either for building new power lines or maintaining existing ones.



# Build tomorrow's energy infrastructure

Invest in tomorrow's energy infrastructure by developing a more reliable, resilient and efficient grid that fosters continued progress and a cleaner energy future



*The battery system stores excess electricity generated by homes in this groundbreaking community energy project in Nottingham.*

## Laying the foundation of future energy networks

With a rare chance to be a part of future-focused residential development from the ground up, WPD was charged up.

The company is one of the key partners working on a residential development where low-energy homes will feed into a community energy battery in Nottingham, England.

The homes – which will eventually total around 500 – have solar panels installed and are connected to a 500kW (2.1MWh) Tesla battery system. The system will store excess electricity to be used on site or sold back to the national grid.

Currently there are around 700 solar panel units at the site's

dedicated solar farm. Together, they produce around 190kW of electricity. Plans call for the installation of an additional 900 panels on new houses as they are built.

A 440kW solar generator has also been connected to WPD's network. This will primarily be used to heat homes in the development but can also be used to support the distribution network in times of high demand. The system can provide 2.1MWh of electricity back to the local primary substation.

As the first project of its kind in the region, early involvement with WPD's innovation team helped the developer to gain a better understanding of the commercial arrangements.

"The way energy is generated and consumed is changing and this type of project has an important role to play in the development of our future energy networks," said Lee Barnett, who has managed the connection request as an 11kV Planner for WPD. "Learning from the project could potentially benefit millions of customers worldwide by changing the way energy is produced and consumed within communities."

The energy project is being delivered by a range of partners through two programs – the Energy Research Accelerator and Project SCENe (Sustainable Community Energy Networks).



## Investing in a smarter, more resilient grid

As the energy industry continues to transform, demands for more efficient, sustainable energy are driving PPL to build a more modern, flexible grid.

The company continues to modernize the grid by incorporating new technology that advances a cleaner energy future, strengthens grid resiliency and improves reliability for more than 10 million customers in the U.S. and U.K.

In 2018, PPL invested about \$3.3 billion in infrastructure improvements. The company is on track to invest an additional \$15 billion through 2022 in projects that strengthen reliability, make the grid smarter and accommodate more renewable energy.

These projects include WPD's cutting-edge community solar project in Nottingham, PPL Electric's \$100 million infrastructure investment in Allentown, and LG&E and KU's upgrades to its transmission systems and substations.

### **Other key projects in 2018 included:**

In Kentucky, LG&E and KU are replacing wooden poles, cross arms, lines and substation controls to improve electric transmission systems throughout the state.

They are also trimming back trees from power lines and removing dead and dying trees around transmission infrastructure. The utilities have implemented a tree-trimming schedule to keep trees a safe distance from transmission lines.

One of the projects will result in the construction and replacement of portions of overhead and underground electric transmission equipment in downtown Lexington. This equipment – including circuits, ducts, and other infrastructure – was installed in the 1970s. Replacing these older materials will reduce the risk of service interruptions. The project will be completed by the fall of 2019.

LG&E and KU received approval from the Kentucky Public Service Commission for a \$112 million distribution automation project to improve reliability. Over the next six years, the utilities will install devices on their grid and integrate advanced technologies that will improve reliability for customers by quickly detecting outages and enabling power to be rerouted to as many customers as possible.

In Pennsylvania, PPL Electric reached a major milestone in its meter replacement project, installing more than 1 million new meters that enable better management of power usage, more accurate outage reporting and new functionality that improves customer service.

Additional investments in smart grid technology include pole-top sensors that detect outages, technology that quickly analyzes the location of faults and remote-operable switches that quickly reroute or restore power. The utility has also invested in new substations and is rebuilding miles of transmission lines to strengthen grid resiliency.

PPL Electric's smart grid technology has restored power to more than 190,000 customers since it went live in early 2016. It has also reduced storm-related outages by 20 percent. The smart grid automatically senses a power outage and reroutes power around the damage, restoring service for many customers within minutes.

Additional efforts such as adding lightning protection and comprehensive tree clearing have also increased the grid's resiliency.

In the U.K., WPD is deploying new fault location equipment that will enable teams to locate transient cable faults before they become permanent. The equipment can detect and analyze issues, restore supplies and report the event to the relevant team to investigate and take action when appropriate. This proactive approach helps manage customer interruptions and reduce the amount of times customers are without power.



## Major meter milestone

In 2018, PPL Electric hit a significant milestone in its ongoing meter replacement project, passing the 1 million meter mark in September.

The \$471 million project to replace all of PPL Electric's 1.4 million meters started at the end of 2016 and is expected to wrap up in 2019. By the end of 2018, the company had installed 1.2 million advanced meters.

PPL Electric is replacing meters that transmitted customer usage information over power lines with digital meters that use very low-level radio-frequency signals to send that information. Meter data is encrypted and protected, and there are multiple layers of safeguards designed to keep electricity usage data private. The meter upgrade was implemented as part of Act 129 of 2008, the state's energy-efficiency law.

Among their benefits, new meters will give customers improved access to data that will help them manage energy use. Operationally, they will help PPL Electric more quickly detect outages and will also enable remote connection and disconnection to more quickly serve customers who are moving.

*Pictured: Updating more than a million meters takes teamwork and involves many different work groups, including the team of five employees led by Christine Manisera, supervisor-Meter Test Operation, who test meters to ensure they are working properly before they are installed in customer homes and businesses.*

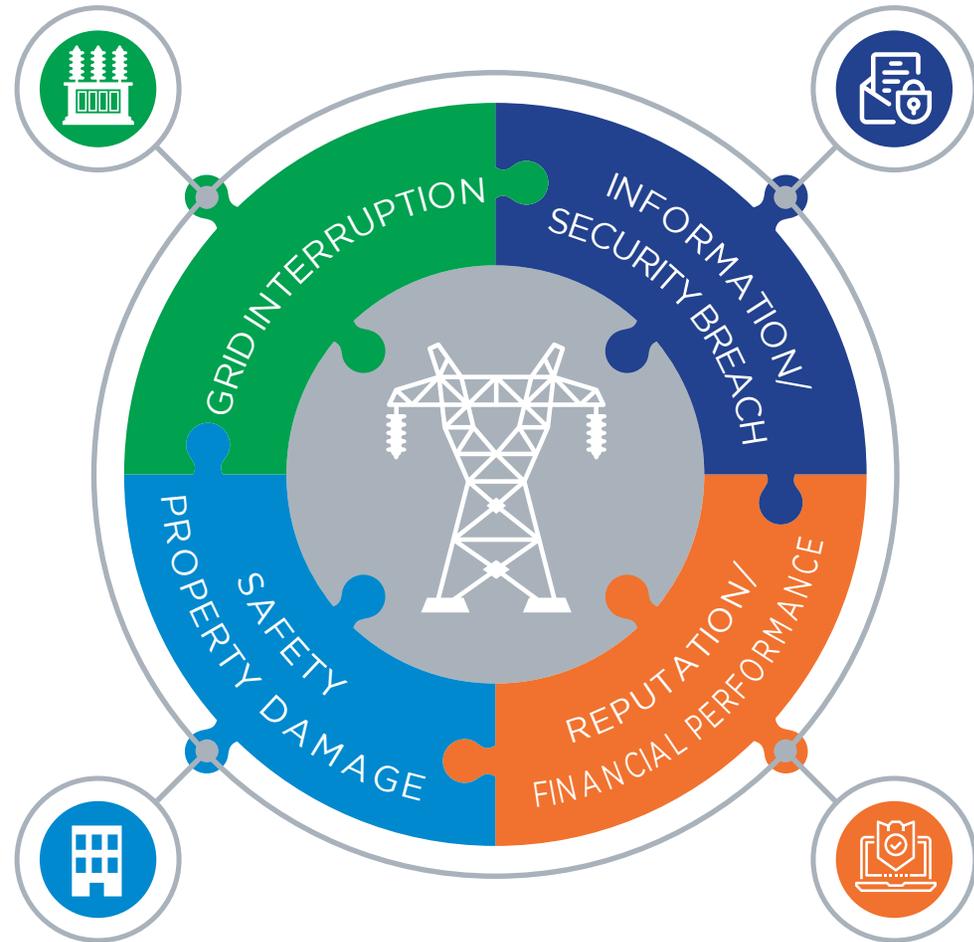
## Ensuring cyber and physical security of the grid

A robust power grid results in a resilient system that limits the adverse impact of natural and physical events. The investments we are making help secure the flow of power to our customers and defend the bulk electricity system – and our customers’ data and privacy – from attack. Our industry takes grid security and reliability responsibilities seriously, and the ability to share sensitive information with the federal government about power grid facilities and operations, including information about threats and vulnerabilities associated with such infrastructure, is a crucial part of our strategy to protect the grid and make it more resilient.

As the threats to our business and energy infrastructure evolve, we are changing how we respond to those threats. We have made – and continue to make – significant investments in tools, technology and people to strengthen our defensive capabilities and enhance grid reliability and resiliency. We continually assess the risk landscape and improve our understanding of potential threats, motivations and techniques. Using this knowledge, we layer on physical and cyber protections to further reduce risk, increase resiliency and maintain the integrity of our systems. We take a defense-in-depth approach to protecting grid assets. This includes: rigorous, mandatory, enforceable and regularly audited reliability standards; close coordination and information sharing among our industry and with government partners at all levels; and efforts to prepare, respond and recover should power grid operations be affected in any way.

In the U.S., PPL complies with all mandatory cybersecurity standards, developed through the FERC and the NERC. PPL regularly assesses our processes and procedures against voluntary standards and cybersecurity frameworks such as the National Institute of Standards and Technology’s Cybersecurity Framework and the Department of Energy’s Cybersecurity Capability Maturity Model, commonly known as C2M2.

Protecting our critical infrastructure isn’t a singular effort – it is a shared responsibility. Our industry is committed to



working across the public and private sector to protect the energy grid. PPL takes an active role in collaborative efforts. PPL provides strategic guidance and input to the Electricity Sub-Sector Coordinating Council (ESCC). The ESCC serves as the principal liaison between the electricity sector and the federal government for coordinating efforts to prepare for and respond to national-level disasters or threats to critical infrastructure. PPL participates in mutual-assistance cybersecurity measures including the Electricity Information Sharing and Analysis Center and Cybersecurity Risk Information Sharing Program, two information-sharing efforts to bolster situational awareness and reduce risk.

Crisis management plans provide resiliency and timely restoration and testing those plans is essential. PPL conducts exercises and drills to help us test our incident protocols and critical functions and identify areas for improvement. As a company, PPL continues to test its own critical functions, responses and playbooks through regular drill activities.

In addition, PPL’s continuing investments in new power lines and substations help strengthen the power grid and make it more resistant to security threats.



## Preparing now for future integration of electric vehicles

Greater electrification of the economy to reduce carbon, in particular the widespread adoption of electric vehicles, could present opportunities for increased electricity sales and require additional investments in distribution networks. PPL is working to make the system enhancements necessary to meet electricity demand over the long term to support the adoption of electricity-fueled transportation.

### **Electric Nation**

WPD's Electric Nation project has installed the last of its 700 residential smart chargers as part of its trial with electric vehicle owners.

Electric Nation, one of WPD's innovation projects, with collaboration partners EA Technology, DriveElectric, Lucy Electric GridKey and TRL, met its recruitment target of 700 participants, with more than 40 different makes and models of electric vehicles taking part.

The final smart charger installation is the result of more than two years' effort for the Electric Nation team.

The project will now be assessing the smart charging technology and feedback from trial participants.

### **Battery powered bucket trucks**

As part of an initiative to cut down fuel emissions and vehicle maintenance and reduce worksite noise, PPL Electric is outfitting all of its bucket trucks with electric-powered bucket lifts.

The new technology uses battery power to operate the boom, bucket and lifts used by lineworkers. It also powers heating and cooling in truck cabs, reducing the need for engine idling, which in turn reduces fuel consumption and maintenance costs and minimizes job site noise. Fuel consumption is offset by as much as 1 gallon of diesel fuel per hour of eliminated idling.

The company also has 15 plug-in Chevy Volt vehicles in its business fleet and 22 electric vehicle charging stations in its service territory for use by employees.

### **Electric Vehicle Charging**

LG&E and KU added additional electric vehicle charging stations in 2018 as part of its commitment to install new electric vehicle charging infrastructure both in public access areas and for business customers interested in hosting charging stations.

LG&E and KU have a goal to install 20 public electric vehicle charging stations across the state, 10 in LG&E's service territory and 10 in KU's service territory. To date, 13 stations have been installed and other locations are being determined to best serve electric vehicle drivers in the region.

Electric vehicle drivers who use the charging stations pay an hourly fee, which vary depending on the location of each station.

The stations are equipped with safety features, which include charging plugs that lock in the stand when not in use. They also have digital display screens and quick-pay options for a user-friendly customer experience.

Through the utilities' program, commercial customers also can host electric vehicle charging stations at their locations for public or private use.

## Research and development

Research and development into providing reliable and sustainable electricity is an important part of today's energy landscape.

PPL's operating utilities participate in a variety of research and development activities throughout the year, including company research, industry-wide studies and partnerships with educational institutions and research organizations.

### In 2018, activities included:

- PPL Electric partnered with EPRI on research related to energy storage, distribution systems, integration of distributed energy resources and crisis communications.
- PPL Electric began the Keystone Solar Future Project in partnership with Drexel University to model the effects of distributed energy on the grid.
- LG&E and KU partnered with EPRI to develop an energy storage demonstration facility co-located with the E.W. Brown Generating Station. Research conducted includes studies designed to understand integration benefits and challenges for battery energy storage.
- LG&E and KU have conducted several studies to understand emissions and cost benefits for converting customer end use technologies to electric from other fuel sources (i.e. natural gas, propane, diesel, gasoline).
- LG&E and KU partnered with the University of Kentucky to develop technologies that can capture carbon dioxide from coal generation.
- As part of its Innovation Strategy, WPD conducts research activities across five broad areas: network performance and efficiency, low carbon networks, smart grid and meters, environment and customer service. Progress is tracked and published on an annual basis through WPD's Future Networks Program.



LG&E employees reviewing project data.

## Embracing technology to improve operations

With an increase in distributed generation and the use of renewable energy, PPL's utility companies are adding innovative programs and technologies, making it easier for customers to integrate these solutions.

PPL's utility companies are using drones to accomplish tasks more safely and quickly and are assessing cutting-edge technology like virtual (VR) and augmented reality (AR) that could provide more efficient ways to operate.

PPL Electric is in the early stages of piloting VR and AR, but the promise is evident. The utility's substation design engineers are using both technologies to simulate construction sequences and assess equipment. The technology has tremendous potential to assist engineers in determining constructability and maintainability and in helping them to produce safe, quality designs.

Nothing will ever totally replace onsite, boots-on-the-ground work on the grid, but technology like VR and AR can transform the way people learn and safely perform job tasks.

Drones are another form of technology that are helping PPL's utility companies save time, cut expenses and improve safety.

Drones can fly close to lines, conductors, towers, substations and buildings, reducing the need for staff to work at great heights and enabling teams to allocate their resources more effectively.

With an increasing number of technological advances comes an increase in data. LG&E and KU are using real-time generation data from the 10 megawatt universal solar facility at E.W. Brown Generating Station to improve operational efficiencies and encourage solar research and development. Information from the site also helps foster better public understanding with the public about solar power's capabilities.

With a constant focus on protecting its systems and building the next generation utility, PPL continues to move energy forward.

*Devraj Banerjee, support engineer for PPL Electric, dons virtual reality headgear as part of a pilot program simulating substation construction and troubleshooting.*



# Exceed customer expectations

Provide affordable, reliable, safe and environmentally responsible energy at the lowest possible cost



WPD technicians review plans for an infrastructure upgrade project.

## A track record of stellar service

PPL's utility companies in Kentucky, Pennsylvania and the U.K. continue to earn top marks for customer satisfaction.

For PPL Electric, 2018 marked the seventh year in a row it earned the top spot in J.D. Power's electric residential customer satisfaction rankings among large utilities in the East and the 15th time in 20 years since J.D. Power has been conducting its survey.

The study measures customer satisfaction with electric utility companies by examining six factors: power quality and reliability; price; billing and payment; corporate citizenship; communications; and customer service. The results are based on responses from more than 104,000 online interviews conducted from July 2017 through May 2018 among residential customers of the 138 largest electric utility brands across the U.S., which collectively represent more than 99 million households.

For KU, 2018 marked the third year in a row it earned the top spot in J.D. Power's electric residential customer satisfaction rankings among midsize utilities in the Midwest.

In the U.K., WPD has consistently distinguished itself as the top-performing distribution network operator group in regulator Ofgem's Broad Measure of Customer Satisfaction.

WPD South Wales became the first license area in the U.K. to achieve the maximum incentive reward target of 8.9 out of 10 across all three key service areas: power cuts, connections and general inquiries.

Ofgem's incentive mechanism rewards network companies for good performance and imposes penalties when performance is poor. The target for maximum incentive rewards is 8.9 out of 10.

The regulator surveys hundreds of customers per license area each month and asks them to rank companies across 10 service areas. In total, there are more than 40 questions covering all aspects of the service customers receive. The scores are then averaged to give an overall ranking for each license area.

## Our customers

The PPL family of companies provides essential energy services to more than 10 million customers in the U.S. and U.K. Through its regulated utility subsidiaries, PPL delivers electricity to customers in the U.K., Pennsylvania, Kentucky and Virginia; delivers natural gas to customers in Kentucky; and generates electricity from power plants in Kentucky. We strive to provide the highest quality safe and reliable service to our customers at a reasonable cost, improving quality of life in the areas we serve.

*Below is information about our customers, by business unit:*

**LG&E and KU** are engaged in the regulated generation, transmission, distribution and sale of electricity in Kentucky and, in KU's case, Virginia. LG&E engages in the distribution and sale of natural gas to more than 320,000 customers in Kentucky. LG&E and KU provide electric service to nearly 1 million customers throughout central, southeastern and western Kentucky, as well as parts of southwestern Virginia.

Overall, LG&E's and KU's service territories span approximately 9,400 non-contiguous square miles. In Virginia, KU operates under the name Old Dominion Power Company.

**PPL Electric** delivers electricity to approximately 1.4 million customers in a 10,000-square mile territory in 29 counties of eastern and central Pennsylvania. PPL Electric customers can choose to purchase their electricity from various suppliers, including from PPL Electric as a Provider of Last Resort under the state's Electric Competition Act.

**WPD** in the U.K. provides regulated electricity distribution services to licensed third-party energy suppliers (its customers) who use WPD's networks to transfer electricity to approximately 7.9 million end-users in a 21,428-square-mile region covering the East Midlands, South West and West Midlands regions of England and South Wales. WPD bills the energy supplier for this service and the supplier is responsible for billing the end-users.

Customers	LG&E and KU Electric	LG&E (Gas)	PPL Electric	WPD	TOTAL
Residential	821,228	300,560	1,257,418		2,379,206
Large Commercial	130,122	25,248	180,448		335,818
Large Industrial	2,472	412	3,589		6,473
Public Authorities	13,372	1,198			14,570
Street Lights	2,105				2,105
Municipals/Wholesale	11				11
Gas Transport		83			83
End users				7,911,552	7,911,552
<b>TOTAL</b>	<b>969,310</b>	<b>327,501</b>	<b>1,441,455</b>	<b>7,911,552</b>	<b>10,649,818</b>





*A happy customer is seeing the benefits of her dog-training facility's energy efficient lighting upgrades thanks to LG&E's Commercial Rebate Program.*

## Customer satisfaction

PPL's utilities provide an outstanding service experience for our customers, consistently ranking among the best for customer satisfaction in the regions we serve.

Customer feedback is important to us as we look to continuously improve. For that reason, PPL relies on independent market research firms to conduct periodic customer satisfaction surveys.

In addition, we subscribe to syndicated studies, such as J.D. Power, as another way to gain insight about our customers from an objective source. Customer feedback is obtained through telephone, mail and online surveys, advisory boards, focus groups, online panels, and customer service lines. We use the results of this feedback to evaluate our service, identify

customer interests and concerns, determine critical needs and offer our customers an opportunity to communicate their interests and concerns.

### Customer satisfaction results

In 2018, KU was named the top ranking mid-size utility in Midwest residential electric customer satisfaction in the J.D. Power 2018 Electric Utility Residential Customer Satisfaction Study.

This follows positive momentum generated in 2017 when KU ranked first and LG&E ranked second in J.D. Power's study.

PPL Electric ranked highest among large electric utilities in the eastern U.S. for residential customer satisfaction for the seventh year in a row, according to a J.D. Power study.

The J.D. Power award means PPL Electric has landed the top spot among large electric utilities for 15 of the 20 years that J.D. Power has been conducting its residential electric customer survey. PPL Electric's score of 747 improved on last year's score by eight points.

WPD was again rated as No. 1 in its industry for customer satisfaction in the U.K., with its four license areas securing the top four places out of the 14 measured by Ofgem. As part of the Ofgem Broad Measure of Customer Satisfaction incentive, a selection of customers is surveyed monthly.

The surveys monitor satisfaction with a DNO's handling of outages (both planned and unplanned), connections (quotations and completed work) and general inquiries. About 15,000 WPD customers are surveyed annually.

## Affordable energy

PPL's utilities continuously review operations to improve efficiency and control costs. This helps to keep energy rates affordable for customers.

PPL Electric customers' costs are below the average of the mid-Atlantic region (18 companies in New Jersey, New York and Pennsylvania). From advanced meter service and energy conservation to home energy rebates and on-site energy analysis, LG&E and KU provide customers with the tools they need to better understand energy usage in their homes or businesses.

Although it's not an electricity supplier, WPD supports the Energy Savings Trust, which works with citizens, businesses and government officials to promote energy efficiency.

## Educating customers about energy efficiency

PPL's utilities share important energy efficiency information with both commercial and residential customers on a regular basis. This information is distributed through online and television advertising, by mail, through digital means and in person. It includes home-energy analytics, energy-savings tips and information about available energy-efficiency rebates.

Under Pennsylvania's Act 129 to help cost-effectively reduce electricity consumption and peak demand, PPL Electric offers 11 energy-efficiency programs for its customers. These programs helped customers save more than 411 million kWh of electricity in 2018.

In all, our energy efficiency programs across PPL's utilities helped customers save more than 547 million kWh of electricity and reduced peak demand by more than 190 megawatts across our business.

At the same time, we took steps to give customers greater options in other areas, from billing alternatives to power outage updates. According to survey data, these alternatives improve customers' opinions of their utility. Here are some of the tools we used in 2018 to better serve our customers:

- LG&E and KU offer Demand Conservation programs for residential and large and small business customers. The programs allow customers to earn bill credits for allowing the utility to install a demand conservation device on their property. These devices allow LG&E and KU to safely cycle connected equipment off and on for brief periods during peak usage summer days.

- PPL Electric offers customers free online energy assessments. Customers provide basic information to get personalized tips on how to save energy. Participants also receive a free energy efficiency kit containing a variety of energy-saving products.
- WPD launched a new energy-saving program that will give up to 100 primary schools the chance to earn financial rewards for reducing their energy consumption. WPD also rolled out a demand response program for business customers in which they can curtail usage or shift demand to off-peak hours to help save energy.



The PPL Electric energy efficiency team takes pride in helping customers to use less, save more.

## Special services for customers

A number of special services are available to meet the broad range of residential and commercial customer needs. Here are some examples:

### Language assistance

LG&E and KU provide live call translation that allows customer representatives to conference in a translator for customers who would prefer to conduct business in their native language instead of English. The service provides access to over 140 different languages.

PPL Electric wants to ensure that customers can receive assistance in the language they prefer. The company's call centers use a translation service that allows customers to communicate with associates about their account in over 75 languages. Additionally, the company makes many of its customer brochures and communications available in both English and Spanish.

WPD's website includes the "speak or translate me" functionality, which includes translation in 102 languages, reads text aloud and uses larger fonts. Letters and publications can be provided in a range of languages, including Braille, on request. Additionally, customers can request a Language Line interpreter to join their conversation if they need a translator.

### Financial assistance

In Kentucky, Winterhelp (LG&E), WinterCare (KU) and Winter-Share (ODP) are third-party heating assistance programs that provide heating assistance for the utilities' qualifying customers. The assistance offered by the programs is contributed by customers through tax-deductible donations. In addition, the companies make contributions to the programs. Both LG&E and KU have relationships with local charities, community action groups and government assistance offices to help customers. In 2018, the companies contributed more than \$1.6 million in



*A customer has a positive experience with PPL Electric's low-income WRAP program and poses with the weatherization technician to capture the moment.*

grants to various assistance programs to help customers with higher bills due to colder winter weather.

In Pennsylvania, **Operation HELP** provides financial aid to PPL Electric residential customers to help pay energy bills for low-income families with financial hardships. The program is funded jointly through contributions from PPL Electric, employees, retirees and customers. More than 99,000 families have been helped since 1983, with 2,745 families receiving grants in 2018. Operation HELP also supports **CARES**, the Customer Assistance and Referral Evaluation Service program. CARES is a special referral service for customers with temporary hardships such as illness, injury, loss of job or high medical bills.

**OnTrack** is a special payment plan for PPL Electric's low-income customers that offers reduced monthly payments, protection from shutoffs, debt forgiveness and referrals to other assistance programs. It is funded through residential customer rates in Pennsylvania.

In the U.K., Power Up and Affordable Warmth are WPD's fuel poverty referral programs. The utility works with partners to refer customers in need of support to help pay their energy bills. In 2017-2018, the programs helped more than 15,000 customers save \$6.8 million.

### Energy savings

**WeCare** (Weatherization, Conservation Advice and Recycling Energy) is designed to create savings through weatherization and energy education to help LG&E and KU income-eligible customers in need. The onsite Home Energy Analysis program provides a certified energy analyst to assess a home's energy efficiency and identify ways participants can reduce their energy use.

**WRAP** – PPL Electric's Winter Relief Assistance Program – helps customers with limited incomes reduce their home energy use and lower their electric bills. WRAP provides energy education and energy saving measures for customers, when applicable. All measures and services are free.

### Vulnerable customers

WPD offers a Priority Services Register for customers who rely on electricity for medical equipment or are elderly, are disabled, have specific communication needs or would be distressed or feel vulnerable in the event of a power outage. The register provides participating customers a direct number to call in the event of a power outage, a password to be used for any needed home visits, special help through the British Red Cross and proactive messages about planned electricity supply interruptions.

## Helping small businesses save

As a small-business owner, Paula Kostick is always eager to explore new ways to make her business more efficient.

With the help of PPL Electric's Business Energy Efficiency Program, Kostick was able to install LED lighting in five of her nine Classic Drycleaners locations.

"We've reduced the amount of energy we use on a daily basis, not only by having the efficiency of LED lighting, but by reducing the amount of lights needed to provide a bright, welcoming environment for both our customers and our employees," Kostick said. "It's a win-win for everyone."

With a mix of incentives such as instant discounts and standard rebates, Classic Drycleaners completed five efficiency projects and saved more than 55,000 kWh of energy.

Kostick and many other small business owners benefit from the various energy efficiency programs offered by PPL Electric. Since the program began in 2009 more than 100,000 small businesses have participated in PPL Electric's energy efficiency programs, collectively saving almost 1.3M MWh of energy.





# Foster an exceptional workplace

Cultivate success by energizing an inclusive, respectful and diverse workplace that rewards performance, enables professional development, encourages employee engagement and enables employees to achieve their full potential

## A wise move

In the U.K., electricity distribution engineers are in such short supply that the profession appears on the government's official Shortage Occupation List.

That's one of the many reasons WPD is working to ensure it's an employer of choice and that more women take on roles in engineering and technology.

To help in its efforts to increase gender diversity among its engineering staff, WPD became a corporate member of WISE – Women in Science and Engineering – a U.K. campaign for gender balance in science, technology and engineering from the classroom to the boardroom. With the help of WISE, the U.K. is on track to reach its goal of 1 million women in STEM careers by the year 2020.

"We need to change perceptions that people may have about the energy industry and will approach this as we would any other business improvement project. We can take positive steps in our recruitment campaigns," said Beverley Dwyer, employee relations manager for WPD.

Becoming a member of WISE gives WPD the opportunity to directly reach women who are looking for jobs with a focus on STEM subjects.

"Our aim is to be seen as an employer that is keen to develop the right people for the job, irrespective of gender," said Dwyer.



Zoe Dashfield, planner for WPD, says she became interested in engineering because she was "looking for a new challenge."

## Our people

PPL is supported by more than 12,000 talented employees, focused on providing safe, reliable energy at the lowest reasonable cost to our customers. In turn, PPL is committed to providing employees with a diverse and engaging workplace, rich with opportunities that foster innovation and personal success. We're always looking for candidates whose core beliefs align with our company values, such as a strong culture of safety, ethics and compliance, as well as a team orientation. Candidates can expect a work environment built around our commitment to safety and our company's fundamental values of customer focus, performance excellence, integrity and openness, corporate citizenship and diversity and engagement.

12,444

Employees

21.5%

Women employees

6.4%

Minority employees

### Diversity and inclusion

The PPL family of companies has a shared commitment to foster a workplace built on mutual respect, understanding and an appreciation for each person's differences.

Multiple perspectives, backgrounds and experiences make an organization stronger. We are proud to provide opportunities for employees with diverse perspectives and experiences to come together to thrive and grow.

We support the principles of non-discrimination and equal opportunity. We foster an atmosphere that brings together talented individuals with a deep history in the energy industry and new ideas for improving the services we provide.

PPL Chairman Bill Spence was among the first group of business leaders to sign onto the CEO Action for Diversity & Inclusion, the largest CEO-driven business commitment to advance diversity and inclusion in the workplace.



Employees wait to enter the Check Your Blind Spots mobile tour, designed to give people the opportunity to learn about and explore ways to mitigate unconscious bias in their everyday lives.

PPL joins more than 500 companies in the pledge to take action to cultivate a workplace where diverse perspectives and experiences are welcomed and respected, and where employees feel encouraged to discuss diversity and inclusion.

#### Additional diversity and inclusion efforts in 2018 include:

- PPL was recognized by Forbes magazine in its first-ever list of America's Best Employers for Diversity. Overall, PPL ranked number 227 and was one of only 10 electric utility companies to make the list.
- PPL's Pennsylvania operations received a score of 100 on the 2018 Corporate Equality Index, a national benchmarking survey and report on corporate policies and practices relating to lesbian, gay, bisexual and transgender workplace equality.
- PPL's Pennsylvania operations received a high score of 90 percent on the 2018 Disability Equality Index, making it one of the 2018 Best Places to Work for Disability Inclusion.

- PPL's African-American Business Resource Group hosted a workshop to help employees better understand the origins, perspectives and focus of the Black Lives Matter movement. With a roundtable discussion and interactive exercises, attendees were encouraged to share life experiences and how those have impacted their lives and careers.
- PPL created a new position, director-Diversity, Inclusion and Talent Management, to oversee diversity and inclusion efforts.
- More than 2,000 LG&E and KU employees participated in Understanding Unconscious Bias training to deepen their understanding of conscious and unconscious bias and develop tools for recognizing bias.
- WPD became a corporate member of WISE (Women in Science and Engineering) to foster and promote gender balance and career opportunities for women in science, technology and engineering. (See more details on [page 57](#).)

## Business resource groups

PPL empowers its employees to form and participate in business resource groups (BRG) to foster an environment of inclusion and provide an opportunity for employees with common experiences and perspectives to network and develop professionally.

Throughout the year, BRG members organize employee “lunch and learns” to educate fellow employees and build awareness on diversity and inclusion topics. Members are also actively involved in various cultural and community programs that enable them to extend their reach outside their workplaces. BRG members have taught leadership skills to Girl Scouts, hosted cultural awareness workshops, handed out first-aid kits to homeless veterans, run tech-focused summer camps for middle school girls and sponsored job-shadowing opportunities for Latino high school students.



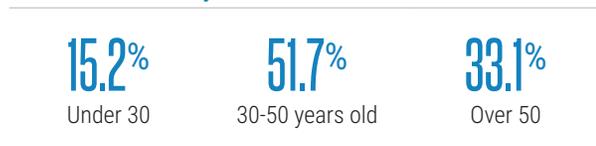
Members of YEP, LG&E and KU's young professional resource group, celebrate at their 2018 year-end social.

<b>AABRG</b>	<b>African-American Business Resource Group</b> fosters an environment of inclusion within PPL, partners to actively recruit and retain diversity, and cultivates positive social change in the community through volunteer outreach.
<b>ACE</b>	<b>Asian Connection for Employees</b> is committed to professional and personal growth of its members, helping communities, and partnering with PPL to accomplish its business goals.
<b>Christian BRG</b>	This group works to facilitate fellowship, communication, and relationships within the PPL community.
<b>FUSE</b>	This group strives to be a catalyst for change in creating a safe environment to promote equal and nondiscriminatory treatment of lesbian, gay, bi-sexual and transgender employees at PPL.
<b>LEAD</b>	<b>Latino Employee Alliance for Diversity</b> is focused on efforts to retain a highly-qualified, diverse work force, promoting professional and personal development for its members and strengthening our communities.
<b>POWER Network</b>	<b>PPL's Organization of Women Engaged for Results</b> has a goal to drive organizational excellence by embracing and meeting the unique needs of women in the workplace.
<b>PPLTomorrow and Young Energy Professionals</b>	These emerging leader groups seek to foster an inclusive culture where PPL's diverse future leaders can connect, develop and grow professionally.
<b>PPLVets and Armed Forces Energy Professionals</b>	These veterans groups are focused on the awareness, effectiveness and well-being of our military veterans and their families.
<b>REACH</b>	<b>Rallying Employees Above Challenging Histories</b> is focused on identifying the needs of differently-abled employees, their friends, families and the communities PPL serves and providing the resources to support their success.



PPL's 2018 class of interns takes a break from a community service project.

**Generational diversity**



**Generational diversity**

To attract top talent, PPL supports a robust internship program that engages students in career-specific work experience, informational interviews, fun activities, exposure to PPL executives and community service. On average, about 62 percent become full-time employees. In 2018, PPL Electric and PPL Services Corporation hosted 29 interns who represented 13 different universities. PPL's intern program also serves as an excellent source of new and diverse talent. Last year's interns were 34 percent diverse (women and minorities).

LG&E and KU have a robust co-op and internship program for college students. In 2018, there were 169 students in the co-op/intern program (36 percent women, 14 percent minority). Additionally, in 2018 there were 32 former co-op/intern students hired into full-time positions (34 percent women, 16 percent

minority). Students are provided not only real-world work experiences, but also opportunities to learn about different areas of the business and network with other employees at all levels of the organization.

PPL participates in many outreach activities to attract a diverse group of talent. Career fairs, multicultural leadership conferences, university leadership summits, mock interviews, resume reviews, panel discussions, career boot-camps, networking events, affinity group sponsorships and dinners are part of ongoing efforts to maintain PPL's position as an employer of choice.

**Workforce planning**

Although PPL has a relatively low turnover rate of 6.9 percent, the company has a strong focus on planning for its future workforce.

Workforce planning enables PPL to:

- Forecast ebbs and flows in workforce requirements
- Determine the size and type of workforce required for future business success
- Identify and address talent gaps and plan for future talent needs
- Develop plans, sourcing strategies and tactics

Workforce planning results are integrated into the business planning process.

PPL is focused on continually developing current employees while also building a strong pipeline of skilled workers for the future. The company has also continued efforts to build a more inclusive workforce.



WPD's craft apprenticeships offer opportunities for on-going development and building a progressive career.

### Craft trade apprentice and trainee programs

PPL's companies are taking a proactive approach to expanding the talent pool for positions that will be available in the next several years due to retirements. In addition to college co-op programs, the company actively recruits and trains trade craft workers.

PPL Electric has 12 apprenticeship programs for various lineworker positions and hires from trade and technical schools throughout the company's 29-county service territory in northeast and central Pennsylvania. The average apprentice program takes 4½ years to complete.

The utility has partnered with a local community college to establish a linework program that teaches students electrical, cable- and communications-related linework. The program has helped to fill a local void for workforce training and has been added to the state's High Priority Occupation Training program

list, allowing Pennsylvania residents who are eligible for Workforce Investment Act or Trade Adjustment Act funding to pay little or nothing for the course.

LG&E and KU have an active craft worker internship program. The craft worker intern program was launched in March 2015 in response to a growing demand for employees with technical knowledge and degrees in the workforce. The program focuses on recruiting the top student talent directly from the community and technical colleges in and around the service area. Students are able to gain hands-on knowledge about the various career paths that LG&E and KU offer while they obtain the degrees that are required for many craft worker positions. The program has expanded to include interns in 14 different areas of the company.

Strategic partnerships have been created at a number of schools around the region including Elizabethtown Community and

Technical College, Bluegrass Community and Technical College, Jefferson Community and Technical College, Hazard Community and Technical College and Ivy Tech. Recruitment efforts build awareness of the various career paths and opportunities within LG&E and KU.

At WPD, 62 apprentices were hired in 2018. The core training takes a minimum of two years and includes positions for overhead lineworkers, who work on the network that is supported by wooden poles or steel towers; jointers who work on the underground cable network; and fitters who work on switches and transformers in substations.

In addition to craft apprentices, WPD also offers a structured training program for planning and design trainees. In 2018, WPD added eight trainees for a total of 16 in the two-year program to develop skills in design and development of projects, including new supplies and asset replacement.



### Military veterans

As PPL develops its workforce planning strategy, the company recognizes that military veterans can offer desired qualities of leadership, dedication, confidence and discipline. PPL has earned a trusted reputation among the military community as a preferred employer.

In addition to allowing time off for active duty and for periodic military training, the company also supports employees who are members of a military reserve organization in the following ways:

- Pay the difference between the regular pay they would have received, if they had worked, and their government pay for a period of six months.
- Provide additional time off to take care of personal affairs, if necessary, before reporting for duty.
- Implement retroactively any step and merit increases that were deferred during the leave of absence.

### Collective bargaining and freedom of association

PPL supports its employees' right to freedom of association as well as the right to form or join a union, bargain collectively and engage in union activities. Nearly half of PPL's workforce is represented by a labor union and the company's operating utilities collaborate with union leadership to enhance workplace safety, meet the growing expectations of our customers, and adapt to the challenges of rapidly changing technologies.

Among other things, employees are encouraged to participate in health and safety groups such as the safety advocate program and to join one or more business resource groups, which are employee-driven organizations formed around common experiences and perspectives.

### Benefits

In addition to challenging careers and competitive salaries, PPL offers an excellent benefits program that enriches the company culture of inclusion and diversity.

PPL offers competitive vacation time, a comprehensive and voluntary retirement program and internal and external development opportunities, including tuition reimbursement offerings for undergraduate and certain graduate degrees.

Our partnership with employees has successfully powered PPL for decades and fostered an environment that encourages employees to directly contribute to the overall success of PPL. As we look toward the future, PPL is looking for team members who embrace and foster new ideas and perspectives to build upon our strong, value-based culture.

For information on benefits packages at PPL's companies, visit [www.pplweb.com/careers/life-at-ppl](http://www.pplweb.com/careers/life-at-ppl).



### Average employee training hours



**567,234**

Total training hours



**46**

Average hours per employee



**5,398**

Number of training courses offered annually to employees



**92%**

Percentage of employees who completed training courses

### Training

PPL's operating companies are committed to creating a workplace atmosphere that rewards performance and encourages professional development. In 2018, PPL employees participated in 567,234 hours of training, an average of 46 hours annually per employee. Beyond occupational training, the company offers personal skills and management training courses. Programs cover a broad range of topics including business topics, effective communications, conflict resolution, personal awareness, effective leadership and situational leadership.

To provide managers across the company with the skills they need to manage and motivate their teams, WPD provides leadership courses that cover topics such as communication methods, individual leadership style and conflict management.

PPL provides classroom and computer-based training programs to improve employee skills and prepare employees for advancement opportunities. In 2018, PPL's utilities offered nearly 5,400 learning courses for its employees.

To prepare them for management roles, PPL Electric provides new supervisors with up to four weeks of training on topics such as diverse thinking, coaching, leadership and accountability. PPL Electric also offers craftworker and lineworker development programs to help its employees enhance and further their skill sets.

LG&E and KU provide valuable skill-development opportunities for all employees aspiring to grow in the companies. A "competency matrix tool" and "development discussion guide" have been developed to assist employees and managers to identify suitable career opportunities and skill requirements. In 2018, the company launched two new programs to give managers and employees resources to further career development (see [page 64](#) for more details). The company also offers a formal mentoring program that enables high-potential employees to gain insight and guidance from senior leadership and a mentoring program that pairs engineers who are just starting their careers with more experienced engineers and managers.

### Health and wellness

PPL values the well-being of employees and offers several programs and activities to support its employees' pursuit of happier, healthier lives.

Pennsylvania employees have been benefitting from the health and fitness expertise of athletic trainers from Occupational Athletics, which provides a wide-range of services to PPL employees. The athletic trainers have helped reduce soft tissue injuries among workers and provided guidance on exercise, weight loss, healthy eating and proper ergonomics on the job. Daily stretching among large groups of employees has been common inside PPL buildings across the Pennsylvania territory. Assessments of employees' health have shown positive trends.

WPD hosted a week-long health program for employees in 2018. Presentations on a wide range of topics, including mental and cardiovascular health were given. Employees were encouraged to take advantage of the company's discounted gym memberships and support systems like the Employee Assistance Program.

LG&E and KU goes the extra mile to help its employees, and it shows. The companies' employee wellness strategy "Healthy for Life" offers programs such as onsite flu shots, onsite biometric screenings, health coaching (telephonic, webinars, onsite group sessions), departmental matching grants, tele-health services, gym and weight reimbursement, a robust Family Assistance Program, financial wellness and on-site exercise and healthy-eating programs. A culture of well-being is woven throughout the entire organization. The Healthy for Life portal serves as the mechanism of adjudication for our medical premium differential, health challenges and incentive management. In 2018, LG&E and KU earned accolades such as:

- The C. Everett Koop Award (Honorable Mention)
- Top 100 Healthiest Workplace in America
- The Business First Healthiest Employer Award
- The American Heart Association Gold Award

## Helping employees navigate their career journey

While every journey starts with a single step, at LG&E and KU employees will have help navigating those steps to ensure a successful career journey.

Results from a 2017 employee survey reflected a desire for employees to have greater understanding of their opportunities for growth and development. As a result, LG&E and KU developed new resources to help managers guide and coach employees to advance their careers, contributing to lifelong learning.

“Career Conversations” provides supervisors with tools to enhance employee career discussions by identifying developmental needs and exploring career interests.

“My Career Journey” is a voluntary training program for employees who want to grow their careers. The content and worksheets help employees put together a personal inventory of skills, interests and goals as they execute their career plans.



*A group of students tours an LG&E power plant as part of a career exploration program.*



# Strengthen communities

Empower the success of future generations by helping to build strong communities today. We strive to be a driver of the economic prosperity in our communities



## Supporting innovation in the classroom

Climate science research, 3D coral reefs, solar-powered robots and urban gardening experiments are just some of the innovative and forward-thinking projects students will be tackling throughout eastern and central Pennsylvania, thanks to the PPL Foundation's Empowering Educator grants.

The PPL Foundation awards 25 grants annually to middle and high school teachers to support STEM activities in their classrooms. Each teacher receives a grant of \$1,000 to spend on equipment and materials for projects.

With most jobs requiring a basic understanding of math and technology, making these subjects interesting for students today has the potential to shape their future careers. For that reason, support for education is a key priority for the PPL Foundation.

The Empowering Educator grant program supports teachers who work every day to inspire students through innovative and meaningful classroom experiences.

Since the grant program's inception in 2003, PPL and now the PPL Foundation have awarded more than \$230,000 to more than 165 teachers.

*Carol Obando-Derstine, center, regional affairs director for PPL Electric, discusses a student's project during a student science competition funded by a PPL Empowering Educators grant.*

## Dedicated community partners

Delivering safe, reliable and affordable power to our customers is our primary role, but we know there are other ways to empower a community. Supporting innovative education programs, helping to revitalize neighborhoods and fostering the development of the future workforce strengthens communities.

PPL goes beyond its core business by focusing its energy on being a good neighbor through a long-standing commitment to corporate citizenship. Our commitment to the environment, philanthropic contributions and the dedicated volunteerism of our employees allow us to improve the communities in which we live, work and serve.

### Volunteering

We proudly partner with many nonprofit organizations in the communities where we live and work. We continually seek new ways to invest our time and resources in our communities. It's how we do business, and it's our way of helping our communities move forward.

PPL employees are known for their dedication to the community, serving on the boards of hundreds of organizations throughout our service areas and taking an active role in our communities through volunteerism.

PPL encourages employees to volunteer their time in their local communities. Our employees are an extension of our commitment to our neighbors, schools and the environment. In 2018, employees volunteered more than 78,000 hours.

These efforts are recognized by the company through various initiatives. In the U.S., PPL enables employees to earn company contributions for organizations where they volunteer. In the U.K., WPD supports employees' efforts through the Pound for Pound initiative. Collectively, PPL's companies contributed nearly \$98,000 to nonprofits in 2018 in recognition of employee volunteer efforts.



Employee volunteers work with partner organizations such as the Lexington, Ky., sheriff's department to complete community service projects during LG&E and KU's annual Day of Caring.

### Charitable giving



**\$12 million**

Total charitable giving



**78,000**

Number of employee volunteer hours

### Philanthropy

We partner with nonprofit organizations working to improve the quality of life in the communities we serve with emphasis on education, community development and environmental stewardship. PPL's contributions to charitable organizations totaled more than \$12 million in 2018.

Funded solely by PPL Corporation, the PPL Foundation awards grants to qualified nonprofit organizations working to improve

the community through initiatives focused on education and sustainable communities.

In 2018, the PPL Foundation provided grants to more than 100 nonprofit organizations throughout the 29 counties in Pennsylvania served by PPL Electric.

Additionally, PPL's employees make meaningful contributions – both in time and monetary contributions.

We are active supporters of United Way in Kentucky and Pennsylvania. In 2018, giving to United Way in Pennsylvania was more than \$4 million, including a corporate match of employee donations. Coupled with financial support from the LG&E and KU Foundation, the employee giving campaign in Kentucky – Power of One – raised more than \$2 million in contributions.

Collectively, the company's employee-giving campaigns helped support more than 300 nonprofit organizations in the communities we serve in 2018.

## Powering local economies

Mapping out long-term energy plans that contribute to economic well-being is part of the way PPL's companies work to provide a bright future for the communities we serve. We understand enhancement and construction of utility infrastructure, at a reasonable cost, is vital to attracting and retaining businesses that create jobs for our communities.

PPL's subsidiaries and their executives are actively involved in business organizations, such as the Chamber of Commerce and economic development organizations.

We provide incentives to support economic development efforts. For example, LG&E and KU's Economic Development Rider – an incentive rate for existing industry expansions, new project

locations and redevelopment initiatives within the service area – continues to be recognized as an exemplary business attraction tool.

The company's economic development and major accounts team works with state, county and local officials, regional partners, site consultants, real estate developers and industry associations on potential business relocations and expansions.

## Disaster readiness

We work closely with public safety and emergency preparedness organizations to coordinate responses to emergency events.

To help restore electric service to communities after catastrophic emergencies or significant natural events,

PPL Electric, LG&E and KU were among the utilities that developed RESTORE, or Regional Equipment Sharing for Transmission Outage Restoration.

The RESTORE program establishes a proactive approach to providing critical equipment for utilities that need additional resources during disaster recovery. Participating utilities identify and share spare transformers and other transmission equipment, which will then be available for purchase by other participants in the event of a major disaster within their service area.

RESTORE is designed to enhance the resilience and reliability of the power grid and provide additional sources for utilities seeking critical equipment during disaster recovery and does not replace existing programs or agreements already in place.



## Emergency preparedness and management

PPL Corporation's Board of Directors has authorized the Corporate Leadership Council to establish an Emergency Management Plan. This plan is based on an annual hazard vulnerability and risk analysis and is a summary of the prevention, mitigation, preparedness, response, continuity of essential functions, and recovery activities that serve as the comprehensive integrated approach to establishing and maintaining an effective response to and recovery from internal or external disasters. This plan provides guidance for the company's role in supporting the National Infrastructure Protection Plan and National Response Framework.

The plan outlines the corporation's processes for dealing with an all-hazards approach to an actual or perceived disaster. The all-hazards nature allows PPL Corporation to remain compliant with North American Electric Reliability Corporation and the electric sector with regard to natural disasters, terrorism, sabotage, cyber-attacks, and other criminal activity posing a risk to the organization.

PPL's operating companies maintain business continuity plans as well as policies and procedures for responding to a variety of emergencies as required by regulatory agencies. An Executive Crisis Team is maintained at the corporate level and, when activated, reviews the appropriateness of the response and recovery effort and ensures adherence to the Emergency Management Plan. The Executive Crisis Team also ensures that the appropriate corporate resources are being deployed to a response and recovery effort, including those necessary to safeguard protection of the public and the environment.

Additionally, PPL's Corporate Security team conducts a hazard vulnerability analysis on an annual basis to evaluate natural, man-made, technological and hazardous materials risks and vulnerabilities.

### **Some examples of emergency planning in 2018 include:**

The Executive Crisis Team completed exercises, including a full-scale active shooter drill incorporating a public safety response at PPL's corporate headquarters in Allentown, Pa.



*PPL partners with local law enforcement agencies and emergency response teams to conduct emergency response drills.*

LG&E and KU's Emergency Management organization, comprised of officers and other support employees, participated in a tabletop exercise related to a hypothetical severe weather incident occurring in the service territory. The scenario involved multiple tornados causing catastrophic damage to company facilities, including a generation plant, and causing extensive damage to the surrounding community.

PPL maintains third-party support for Duty of Care responsibilities, providing medical access and security services support for international travelers. In 2018, over 90 employees downloaded a mobile application to support work-related travel.

In 2018, LG&E and KU participated in the 2018 Long Term Power Outage exercise organized by the Kentucky Emergency Management. LG&E and KU also participated in the second annual Emergency All-Sector Response Transnational Hazard Exercise - EARTH EX 18 "Black Sky" exercise sponsored by the Electric Infrastructure Security Council (EIS Council) which included organizations from 14 countries. The EIS Council defines a "Black Sky Hazard" as "a catastrophic event that severely disrupts the normal functioning of our critical infrastructures in multiple regions for long durations."

PPL Electric developed, exercised and strengthened response plans for multiple all-hazard events, including "Black Sky." Throughout the year, PPL Electric collaborated and conducted outreach programs with state and local public safety agencies and conducted numerous drill exercises to ensure preparedness for many types of events including participation in EARTH EX 18 and the PJM Grid Security Exercise.

Emergency Planning with WPD remains focused on three main topics: major supply restoration, disaster recovery and recovery from a total system shutdown.

The vast majority of major supply interruption events are weather related, and mainly caused by wind storms, although occasionally snow and heavy rain is also a contributory cause. Planning for these events starts with good weather forecasting, and across the WPD business, daily weather forecasts looking ten days ahead are provided to managers.

To support disaster recovery, WPD maintains a network of Control and Contact centers that allow redeployment of personnel in the event of a failure. These Disaster Recovery Centers provide services throughout the WPD territory and are exercised regularly throughout the year to maintain confidence in the facility. This was put to the test during the "Beast from the East" event of February/March 2018 when significant snowfall brought the U.K. to a standstill and affected power supplies.

Working with the U.K. Government, National Grid and power station operators, WPD maintains a process to restore power in the event of a total shutdown (Black Start) of the U.K. electricity network. These plans are regularly tested through drills and simulation and are known as Local Joint Restoration Plans. Recently reviewed, WPD has played a key part in their re-formatting and look forward to their re-issue in 2019 to coincide with the conclusion of the Black Start Task Group. The updating of these plans and work of the Black Start Task Group should help achieve faster restorations.



## Powering economic development in Kentucky

LG&E and KU are well recognized in Kentucky as leaders for encouraging economic vitality and quality of life. The utilities continue to have nationally competitive electricity rates and have made strategic investments in infrastructure and technology to ensure the communities served have safe, reliable energy and are poised for economic growth.

Over the past two years, the companies' economic development efforts contributed to 268 announcements of new or expanding businesses within their service territories, which includes more than 12,562 jobs and investments of more than \$4.8 billion.

In 2018, Site Selection, the international economic development magazine, once again named LG&E and KU a "Top 10 Utility" for the companies' efforts to grow business and attract jobs to Kentucky.

As further commitment to its ongoing focus on fostering growth and expansion across the state, LG&E and KU expanded their economic development teams by creating a new role, director of Business and Economic Development.

*Pictured: LG&E and KU's economic development team plays a pivotal role in bringing business to Kentucky.*

# GRI index

PPL Corporation is committed to reporting on our sustainability performance annually, using the Global Reporting Initiative Sustainability Reporting Framework with the Electric Utilities Sector Supplement. This index details where specific GRI indicators appear in this report or in other publicly available reports. All data reflect information as of Dec. 31, 2018.

GRI Standards	Description	Response
<b>ORGANIZATIONAL PROFILE</b>		
102-1	Name of the organization	PPL Corporation
102-2	Primary brands, products, and/or services	Headquartered in Allentown, Pa., PPL Corporation is one of the largest companies in the U.S. utility sector. PPL's high-performing, award-winning utilities – Western Power Distribution (East Midlands) plc, Western Power Distribution (South Wales) plc, Western Power Distribution (South West) plc and Western Power Distribution (West Midlands) plc (together, WPD), Louisville Gas and Electric Company (LG&E), Kentucky Utilities Company (KU) and PPL Electric Utilities Corporation (PPL Electric) – provide an outstanding service experience for our 10.6 million customers, consistently ranking among the best in the U.S. and U.K.
102-3	Location of organization's headquarters	Allentown, Pa.
102-4	Number of countries where the organization operates, and names of countries with either major operations or that are specifically relevant to the sustainability issues covered in the report	PPL operates utilities in the U.S. and the U.K.
102-5	Nature of ownership and legal form	PPL Corporation is an investor-owned utility holding company.
102-6	Markets served (including geographic breakdown, sectors served and types of customers/beneficiaries)	For information on the markets we serve, see <a href="#">page 7</a> .
102-7	Scale of the reporting organization	See At a Glance on <a href="#">page 6</a> . More detailed information can be found in <a href="#">PPL's 2018 Form 10-K</a> .
102-8	Total workforce by employment type, employment contract and region, broken down by gender	PPL has 12,444 employees. For more details on employees, see <a href="#">page 57</a> .
102-41	Percentage of employees covered by collective bargaining agreements	As of the end of 2018, 49% of our employees were covered by collective bargaining agreements.
102-9	Describe the organization's supply chain	See Supply Chain on <a href="#">page 30</a> .
102-10	Significant changes during the reporting period regarding size, structure or ownership	There were no significant changes from the previous reporting period.
102-11	Explanation of whether and how the precautionary approach or principle is addressed by the organization	See Governance on <a href="#">page 20</a> .
102-12	List externally developed economic, environmental and social charters, principles or other initiatives to which the organization subscribes or which it endorses	PPL Corporation is not party to externally developed charters.
102-13	Memberships in associations (such as industry associations) and/or national/international/advocacy organizations	PPL's operating utilities are members of various industry associations including the Electricity Producers Research Institute and the Edison Electric Institute.
<b>STRATEGY AND ANALYSIS</b>		
102-14	Statement from the most senior decision-maker of the organization	For a message from our chairman, president and CEO, see <a href="#">page 4</a> .
102-15	Description of key impacts, risks and opportunities	For a message from our chairman, president and CEO, see <a href="#">page 4</a> .

## GRI INDEX

GRI Standards	Description	Response
<b>ETHICS AND INTEGRITY</b>		
102-16	Describe the organization's values, principles, standards and norms of behavior, such as codes of conduct and codes of ethics	See Compliance and Ethics on <a href="#">page 22</a> .
102-17	Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistle-blowing mechanisms or hotlines	See Compliance and Ethics on <a href="#">page 22</a> .
<b>GOVERNANCE</b>		
102-18	Report the governance structure of the organization, including committees of the highest governance body	PPL Corporation's corporate governance structure is posted online on the corporate website at <a href="http://www.pplweb.com/governance">www.pplweb.com/governance</a> . For more information on corporate governance, see <a href="#">page 20</a> of this report, and pages 13-17 of <a href="#">PPL's 2019 Proxy Statement</a> .
102-19	Report the process for delegating authority for economic, environmental and social topics from the highest governance body to senior executives and other employees	The Board has designated its Compensation, Governance and Nominating Committee (CGNC) as the body responsible for overseeing PPL's practices and positions to further its corporate citizenship, including sustainability, environmental and corporate social responsibility initiatives.
102-20	Report whether the organization has appointed an executive-level position or positions with responsibility for economic, environmental and social topics, and whether post holders report directly to the highest governance body	The Board has designated its CGNC as the body responsible for overseeing PPL's practices and positions to further its corporate citizenship, including sustainability, environmental and corporate social responsibility initiatives. PPL's vice president of public affairs and sustainability is the executive level position responsible for economic, environmental and social topics, reporting to senior leadership and presenting to the CGNC and the full board.
102-21	Report processes for consultation between stakeholders and the highest governance body on economic, environmental and social topics. If consultation is delegated, describe to whom and any feedback processes to the highest governance body	Anyone wishing to make their concerns known to PPL's Board or independent directors may contact the PPL lead director, currently John W. Conway, or the Board of the independent directors as a group, by writing to such person or persons in care of the Corporate Secretary's Office at: PPL Corporation, 2 N. Ninth St., GENTW4, Allentown, PA 18101. Senior management and certain directors meet regularly with investors to discuss matters of interest with shareowners, such as financial performance, strategic direction, corporate governance, executive compensation, environmental and social topics.
102-22	Composition of highest governing body	Information regarding our Board of Directors is available on pages 4-9 of <a href="#">PPL's 2019 Proxy Statement</a> .
102-23	Is chair of highest body also an executive officer?	Yes. See Board Leadership Structure on pages 10-11 of <a href="#">PPL's 2019 Proxy Statement</a> .
102-24	Report the nomination and selection processes for highest governance body members	See Director Nomination Process on pages 15-16 of <a href="#">PPL's 2019 Proxy Statement</a> .
102-25	Report processes for the highest governance body to ensure conflicts of interest are avoided	The Board of Directors determines the independence of each director before the director joins the Board and on an annual basis thereafter. Disclosure of other Board memberships and PPL's policy on related-person transactions, together with any disclosures, are included each year in the annual proxy statement.
102-26	Report the highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies and goals related to economic, environmental and social impacts	The Board has designated its CGNC as the body responsible for overseeing PPL's practices and positions to further its corporate citizenship, including sustainability, environmental and corporate social responsibility initiatives.
102-27	Report the measures taken to enhance the board's collective knowledge of economic, environmental and social topics	See Governance on <a href="#">page 20</a> .

GRI Standards	Description	Response
<b>GOVERNANCE (continued)</b>		
102-28	Report the process for evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics. Report whether such evaluation is independent or not and its frequency. Report whether such evaluation is a self-assessment. Report actions taken in response to evaluation of the highest governance body's performance with respect to governance of economic, environmental and social topics, including, at a minimum, changes in membership and organizational practices.	See Board and Committee Evaluations on page 11 of <a href="#">PPL's 2019 Proxy Statement</a> .
102-29	Report the highest governance body's role in the identification and management of economic, environmental and social impacts, risks and opportunities	See Governance on <a href="#">page 20</a> and The Board's Role in Risk Oversight on page 18 of <a href="#">PPL's 2019 Proxy Statement</a> .
102-30	Report the highest governance body's role in reviewing the effectiveness of the organization's risk management processes for economic, environmental and social topics	See Governance on <a href="#">page 20</a> and The Board's Role in Risk Oversight on page 18 of <a href="#">PPL's 2019 Proxy Statement</a> .
102-31	Report the frequency of the highest governance body's review of economic, environmental and social impacts, risks and opportunities	See Governance on <a href="#">page 20</a> .
102-32	Report the highest committee of position that formally reviews and approves the organization's sustainability report and ensures that all material aspects are covered	Senior executive leaders review and approve sustainability reports and discuss with the CGNC.
102-33	Process for communicating critical concerns to the highest governance body	See Compliance and Ethics on <a href="#">page 22</a> .
102-34	Remuneration policies for the highest governance body and senior executives	PPL's approach to compensation of its directors and executives can be found in <a href="#">PPL's 2019 Proxy Statement</a> (pages 20-21 for directors and pages 27-54 for executive officers).
102-36	Process for determining remuneration including use of consulting	PPL's process for determining compensation of its directors and executives, including the use of consultants, can be found in <a href="#">PPL's 2019 Proxy Statement</a> (pages 14-15 and 31-49).
102-37	Report how stakeholder views are sought for determining remuneration	See page 31 of <a href="#">PPL's 2019 Proxy Statement</a> .
<b>STAKEHOLDER ENGAGEMENT</b>		
102-40	List of stakeholder groups engaged by the organization	PPL engages with a variety of stakeholder groups, including customers, community groups, shareowners, potential investors, employees, retirees, labor unions, contractors and others in our supply chain as well as various professionals in academia, industry and government. For more information on stakeholder engagement, see <a href="#">pages 13-15</a> .
102-42	Basis for identification and selection of stakeholders with whom to engage	For more information on stakeholder engagement, see <a href="#">pages 13-15</a> .
102-43	Approaches to stakeholder engagement, including frequency of engagement by type and by stakeholder group	PPL is committed to keeping our stakeholders informed through various formal and informal groups, forums and events. For more information on stakeholder engagement, see <a href="#">pages 13-15</a> .
102-44	Key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting	For more information on stakeholder engagement, see <a href="#">pages 13-15</a> .

## GRI INDEX

GRI Standards	Description	Response
<b>IDENTIFIED MATERIAL ASPECTS AND BOUNDARIES</b>		
102-45	List all entities included in the organization's consolidated financial statements or equivalent documents	PPL Corporation's utility subsidiary operating companies are WPD, LG&E, KU and PPL Electric. For a listing of significant subsidiaries, see Exhibit 21 of <a href="#">PPL's 2018 Form 10-K</a> .
102-46	Process for defining report content	For details on our process for defining report content, see <a href="#">page 11</a> .
102-47	List all the material aspects identified in the process for defining report content	For details on our process for defining report content, see <a href="#">page 11</a> .
102-48	Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements	PPL had no significant restatements to report in 2018.
102-49	Report significant changes from previous reporting periods in scope and aspect boundaries	There were no significant changes from the previous reporting period.
103-1	For each material aspect, report the aspect boundary within the organization	For information about how material aspects were determined, see <a href="#">page 11</a> .
103-2	Describe the management approach to material topics	PPL's approach to material topics are described at length throughout this report in chapters related to compliance ( <a href="#">page 22</a> ), strategy ( <a href="#">page 17</a> ), environmental management ( <a href="#">page 34</a> ), customer relations ( <a href="#">page 51</a> ), workforce ( <a href="#">page 57</a> ) and community relations ( <a href="#">page 65</a> ).
<b>REPORT PROFILE</b>		
102-50	Reporting period (e.g., fiscal/calendar year) for information provided	This report focuses on calendar year 2018.
102-51	Date of most recent previous report (if any)	PPL's last Corporate Sustainability Report was published in 2018. It focused on calendar year 2017.
102-52	Reporting cycle (annual, biennial, etc.)	PPL prepares this report annually.
102-53	Contact point for questions regarding the report or its contents	Questions and comments about this report can be directed to <a href="mailto:community@pplweb.com">community@pplweb.com</a> .
102-54	Claims of reporting in accordance with GRI Standards	This report has been prepared in accordance with the GRI Standards: Core option.
102-55	Table identifying the location of the standard disclosures in the report	Disclosures are included in the GRI Index of this report, beginning on <a href="#">page 70</a> .
102-56	Policy and current practice with regard to seeking external assurance for this report	External assurances for this report have not been conducted.
<b>ECONOMIC</b>		
<b>PERFORMANCE</b>		
201-1	Direct economic value generated and distributed, including revenues, operating costs, employee compensation, donations and other community investments, retained earnings, and payments to capital providers and governments	For 2018 Financial Highlights, see <a href="#">page 18</a> . Additional financial information can be found in <a href="#">PPL's 2018 Form 10-K</a> .
201-2	Financial implications and other risks and opportunities for the organization's activities due to climate change	Refer to <a href="#">PPL's 2018 Form 10-K</a> .
201-3	Coverage of the organization's defined benefit plan obligations	Refer to <a href="#">PPL's 2018 Form 10-K</a> .
201-4	Significant financial assistance received from government	None.

GRI Standards	Description	Response
<b>MARKET PRESENCE</b>		
202-1	Range of ratios of standard entry-level wage by gender compared to local minimum wage at significant locations of operation	PPL Corporation hires all employees, including interns, at a rate significantly above minimum wage.
202-2	Proportion of senior management hired from the local community at significant locations of operations	Hiring and promotion is based on merit, not whether a candidate is from a particular locality.
<b>INDIRECT ECONOMIC IMPACTS</b>		
203-1	Development and impact of infrastructure investments and services supported	See more about infrastructure investments on <a href="#">page 44</a> .
203-2	Significant indirect economic impacts, including the extent of impacts	See Strengthening Communities on <a href="#">page 65</a> .
204-1	Proportion of spending on local suppliers at significant locations of operations	See Supply Chain on <a href="#">page 30</a> .
<b>ANTI-CORRUPTION</b>		
205-1	Total number and percentage of operations assessed for risks related to corruption and the significant risks identified	All business units are subject to corruption risks analysis.
205-2	Communication and training on anti-corruption policies and procedures	All employees receive regular anti-corruption training as well as training on a variety of important policies and procedures. PPL's <i>Standards of Integrity</i> , which highlights certain key policies and procedures, can be accessed online at any time.
205-3	Confirmed incidents of corruption and actions taken	PPL does not publicly disclose this information.
<b>ANTI-COMPETITIVE BEHAVIOR</b>		
206-1	Total number of legal actions for anti-competitive behavior, anti-trust and monopoly practices and their outcomes	PPL does not publicly disclose this information.
<b>ENVIRONMENTAL</b>		
<b>MATERIALS</b>		
301-1	Materials used by weight or volume	For information on material handling, see <a href="#">page 40</a> .
301-2	Report the percentage of recycled input materials used to manufacture the organization's primary products and services	We continue to investigate opportunities to incorporate recycled fuels in our operations.
<b>ENERGY</b>		
302-1	Energy consumption within the organization	For information on energy consumption, see <a href="#">page 82</a> .
302-2	Energy consumption outside the organization	For information on energy consumption, see <a href="#">page 82</a> .
302-3	Energy intensity	For information on energy intensity, see <a href="#">page 83</a> .
302-4	Reduction of energy consumption	For information on PPL's efforts to reduce energy consumption within our operations, see <a href="#">page 82</a> .
302-5	Reductions in energy requirements of products and services	For information on programs that help customers save energy, see <a href="#">page 42</a> .

## GRI INDEX

GRI Standards	Description	Response
<b>WATER</b>		
303-1	Total water withdrawal by source	For information on water consumption, see <a href="#">page 84</a> .
303-2	Water sources significantly affected by withdrawal of water	For information on PPL's approach to water management, see <a href="#">page 39</a> .
303-3	Percentage and total volume of water recycled and reused	For information on PPL's approach to water management, see <a href="#">page 39</a> .
<b>BIODIVERSITY</b>		
304-1	Operational sites owned, leased, managed in or adjacent to protected areas and areas of high biodiversity value outside protected areas	For information on PPL's approach to biodiversity, see <a href="#">page 41</a> .
304-2	Description of significant impacts of activities, products and services on biodiversity in protected areas and areas of high biodiversity value outside protected areas	For information on PPL's approach to biodiversity, see <a href="#">page 41</a> .
304-3	Habitats protected or restored	For information on PPL's approach to biodiversity, see <a href="#">page 41</a> .
304-4	Total number of IUCN Red List species and national conservation lists species with habitats in areas affected by operations, by level and extinction risk	For information on PPL's approach to biodiversity, see <a href="#">page 41</a> .
<b>EMISSIONS</b>		
305-1	Direct greenhouse gas (GHG) emissions (Scope 1)	For information on PPL's approach to emissions, see <a href="#">page 40</a> .
305-2	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	For information on PPL's approach to emissions, see <a href="#">page 40</a> .
305-3	Indirect greenhouse gas (GHG) emissions (Scope 3)	For information on PPL's approach to emissions, see <a href="#">page 40</a> .
305-4	Greenhouse gas (GHG) emissions intensity	For information on PPL's approach to emissions, see <a href="#">page 40</a> .
305-5	Reduction of greenhouse (GHG) emissions	For information on PPL's approach to emissions, see <a href="#">page 40</a> .
305-6	Emissions of ozone-depleting substances (ODS)	This is not material to PPL.
305-7	NOx, SOx, and other significant air emissions	For information on PPL's approach to emissions, see <a href="#">page 40</a> .
<b>EFFLUENTS AND WASTE</b>		
306-1	Total water discharge by quality and destination	For information on PPL's approach to water management, see <a href="#">page 40</a> .
306-2	Total weight of waste by type and disposal method	For information on PPL's approach to waste management, see <a href="#">page 41</a> .
306-3	Total number and volume of significant spills	PPL had 11 reportable spills with a total volume of 51,601 liters (non-PCB transformer oil). All spills were cleaned in full compliance with established spill policies.
306-4	Weight of transported, imported, exported or treated waste deemed hazardous under the terms of the Basel Convention Annex I, II, III and VIII, and percentage of transported waste shipped internationally	This is not material to PPL, as the company's operations do not transport any hazardous waste across international borders.
306-5	Identity, size, protected status and biodiversity value of water bodies and related habitats significantly affected by the organization's discharges of water and runoff	Discharges to lakes and rivers are by regulatory permits. With our operating practices, discharges are designed to protect aquatic species and the environment.

GRI Standards	Description	Response
<b>COMPLIANCE</b>		
307-1	Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations	No significant fines (defined as more than \$100,000).
<b>SUPPLIER ENVIRONMENTAL ASSESSMENT</b>		
308-1	Percentage of new suppliers that were screened using environmental criteria	PPL contractually requires supplier adherence to environmental terms and conditions.
308-2	Significant actual and potential negative environmental impacts in the supply chain and actions taken	PPL contractually requires supplier adherence to environmental terms and conditions.
<b>SOCIAL - LABOR PRACTICES AND DECENT WORK</b>		
<b>EMPLOYMENT</b>		
401-1	Total number and rates of new employee hires and employee turnover by age group, gender and region. See G4-10 for data on this indicator.	For information on PPL's workforce, see <a href="#">pages 57-64</a> .
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation	For information on benefits provided to employees, see <a href="#">page 62</a> .
401-3	Return to work and retention rates after parental leave, by gender	A total of 63 women and 254 men used parental leave. A total of 317 employees returned to work, resulting in a 100% retention rate.
<b>LABOR/MANAGEMENT RELATIONS</b>		
402-1	Minimum notice periods regarding operational changes, including whether these are specified in collective agreements	Notice periods vary by collective bargaining agreement. We comply with applicable laws, regulations and collective bargaining agreements.
<b>OCCUPATIONAL HEALTH AND SAFETY</b>		
403-1	Percentage of total workforce represented in informal joint management-worker health and safety committees that help monitor and advise on occupational health and safety programs	PPL has voluntary employee safety committees across the company in virtually every business unit that plan and execute safety improvement activities. These committees, with representatives from first line and management, communicate safety messages to employees and hold regular safety meetings.
403-2	Type of injury and rates of injury, occupational diseases, lost days and absenteeism, and total number of work-related fatalities, by region and gender	For information on PPL's safety program, see <a href="#">pages 27-29</a> .
403-3	Workers with high incidence or high risk of diseases related to their occupation	No high risks or incidents identified.
403-4	Health and safety topics covered in formal agreements with trade unions	All collective bargaining agreements contain language that references the need for a strong health and safety program and a joint health and safety advisory committee.
<b>TRAINING AND EDUCATION</b>		
404-1	Average hours of training per year per employee by gender and by employee category	For information on professional development, see <a href="#">page 63</a> .
404-2	Programs for skills management and lifelong learning that support the continued employability of employees and assist them in managing career endings	For information on professional development, see <a href="#">page 63</a> .
404-3	Percentage of employees receiving regular performance and career development reviews, by gender and by employee category	PPL's expectations are that all eligible employees receive an evaluation of their skills and performance on an annual basis. The company's business units have formal performance appraisal processes that cover 100% of eligible active, full-time and part-time employees.

## GRI INDEX

GRI Standards	Description	Response
<b>DIVERSITY AND EQUAL OPPORTUNITY</b>		
405-1	Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership and other indicators of diversity	For information on diversity at PPL, see <a href="#">page 60</a> .
405-2	Ratio of basic salary and remuneration of women to men by employee category, by significant locations of operations	PPL complies with all state, federal and local laws and regulations prohibiting discrimination.
<b>SOCIAL - HUMAN RIGHTS</b>		
<b>NONDISCRIMINATION</b>		
406-1	Total number of incidents of discrimination and corrective actions taken	This is not publicly disclosed information. Company policies prohibit discrimination and set forth a robust procedure for reporting, investigating and responding to allegations of discrimination.
<b>FREEDOM OF ASSOCIATION AND COLLECTIVE BARGAINING</b>		
407-1	Operations and suppliers identified in which the right to exercise freedom of association and collective bargaining may be violated or at significant risk, and measures taken to support these rights	No risks to, or violations of, the right to freedom of association or the right to form or join a union, bargain collectively, or engage in union activities were identified. Nearly half of PPL's workforce is represented by a labor union and the company's operating utilities collaborate with union leadership to enhance workplace safety, meet the growing expectations of our customers, and adapt to the challenges of rapidly changing technologies.
<b>CHILD LABOR</b>		
408-1	Operations and suppliers identified as having significant risk for incidents of child labor, and measures taken to contribute to the effective abolition of child labor	None. We comply with applicable laws, rules and regulations wherever we operate.
<b>FORCED OR COMPULSORY LABOR</b>		
409-1	Operations and suppliers identified as having significant risk for incidents of forced or compulsory labor, and measures that contributed to the elimination of all forms of forced or compulsory labor	None. We comply with applicable laws, rules and regulations wherever we operate.
<b>SECURITY PRACTICES</b>		
410-1	Percentage of security personnel trained in organization's human-rights policies or procedures that are relevant to operations	All domestic Corporate Security personnel complete corporate standards of integrity training on an annual basis. Additionally, all domestic Corporate Security personnel complete a training program on indicators and response to workplace violence events at least bi-annually. All contract security personnel working domestically complete training programs on ethics and conduct and cultural diversity administered by their employer.
<b>INVESTMENT</b>		
412-2	Total hours of employee training on human-rights policies or procedures, concerning aspects of human rights that are relevant to operations, including the percentage of employees trained	All employees are trained on PPL's <i>Standards of Integrity</i> , which includes topics on respect in the workplace, nondiscrimination and compliance with laws.
412-3	Total number and percentage of significant investment agreements and contracts that include human-rights clauses or that underwent human-rights screening	PPL has incorporated human rights into our <i>Supplier Code of Conduct</i> and it is implicitly incorporated into our <i>Standards of Integrity</i> . As a result, each of our subsidiaries is sensitive to human rights. In the U.K. WPD has more explicit human rights provisions driven by regulatory requirements in the U.K. and consistent with PPL's policies.

GRI Standards	Description	Response
<b>SOCIAL SOCIETY</b>		
<b>LOCAL COMMUNITIES</b>		
413-1	Percentage of operations with implemented local community engagement, impact assessments and development programs	100% of PPL's operations have programs for local community engagement. For more information on community engagement, see <a href="#">pages 65-69</a> .
<b>SUPPLIER HUMAN-RIGHTS ASSESSMENT</b>		
414-1	Percentage of new suppliers that were screened using human-rights criteria	PPL's <i>Standards of Conduct and Integrity for Suppliers</i> requires that all suppliers adhere to all applicable labor and human rights laws.
414-2	Significant actual and potential negative human rights impacts in the supply chain and actions taken	PPL's <i>Standards of Conduct and Integrity for Suppliers</i> requires that all suppliers adhere to all applicable labor and human rights laws.
<b>PUBLIC POLICY</b>		
415-1	Total value of political contributions by country and recipient/beneficiary	For information on PPL's public policy approach, see <a href="#">page 23</a> .
<b>SOCIAL PRODUCT RESPONSIBILITY</b>		
<b>CUSTOMER HEALTH AND SAFETY</b>		
416-1	Percentage of significant product and service categories for which health and safety impacts are assessed for improvement	Electricity and natural gas can be dangerous if handled incorrectly. Safety programs are part of our ongoing operations. We have extensive training and safety education programs for customers, contractors and employees.
416-2	Total number of incidents of non-compliance with regulations and voluntary codes concerning the health and safety impacts of products and services during their life cycle, by type of outcome	PPL does not publicly disclose this information.
<b>PRODUCT AND SERVICE LABELING</b>		
417-1	Type of product and service information required by the organization's procedures for product and service information and labeling, and percentage of significant product and service categories subject to such information requirements	Electric and natural gas service cannot be labeled. We provide regular and detailed safety information to customers via bill inserts, public service announcements, presentations, social media and the company's websites.
<b>CUSTOMER PRIVACY</b>		
418-1	Total number of substantiated complaints regarding breaches of customer privacy and losses of customer data	PPL does not publicly disclose this information.
<b>COMPLIANCE</b>		
419-1	Significant fines and non-monetary sanctions for non-compliance with laws and/or regulations in the social and economic area	Refer to the <a href="#">PPL's 2018 Form 10-K</a> .

## GRI INDEX

Indicator	Description	Response
<b>SECTOR DISCLOSURES - ELECTRIC UTILITIES</b>		
EU1	Installed capacity, broken down by primary energy source and regulatory regime	For details on installed capacity, see <a href="#">page 82</a> .
EU2	Net energy output broken down by primary energy source and regulatory regime	For details on net energy output, see <a href="#">page 82</a> .
EU3	Number of residential, industrial, institutional and commercial accounts	For details on PPL's customers, see <a href="#">page 52</a> .
EU4	Length of above and underground transmission and distribution	See the infrastructure overview on <a href="#">page 44-50</a> .
EU5	Allocation of CO <sub>2</sub> emissions allowances, or equivalent, broken down by carbon trading framework	None.
G4-DMA Availability & Reliability	Management approach to ensure short- and long-term electricity availability and reliability	PPL addresses availability and reliability in our integrated resource plans that are submitted to regulatory agencies. More information is also available in <a href="#">PPL's 2018 Form 10-K</a> .
EU10	Planned capacity against projected electricity demand over the long term, broken down by energy source and regulatory regime	Forecast demand for LG&E and KU is 6,655 MW, and LG&E and KU generation capacity is currently 8,299 MW, providing an 24.7% reserve margin
G4-DMA Demand Side Management	Demand-side management programs including residential, commercial, institutional and industrial programs	Where applicable, PPL addresses planned capacity and projected demand in integrated resource plans that are submitted to regulatory agencies. For information about demand-side management programs for customers, see <a href="#">page 54</a> .
G4-DMA Research & Development	Research and development activity and expenditure aimed at providing reliable electricity and promoting sustainable development	Research and development activities addressing short- and long-term electricity availability and reliability include investigations of advanced fossil generation, flexible plant operations, distributed energy resource integration, grid scale energy storage and advanced grid technologies to support the integrated grid. The research spans from paper studies to pilot demonstrations. The information supports the integrated resource-planning and business-planning processes across the organization. For more information on research and development initiatives, see <a href="#">page 49</a> .
EU11	Average generation efficiency of thermal plants by energy source and regulatory regime	In 2018, the average generation efficiency for LG&E and KU was 10.1 (MMBTU/Net MWh).
EU12	Transmission and distribution losses as a percentage of total energy	PPL's operating utilities use standard utility industry practices to review and identify line losses that are outside of industry norms and take the necessary steps to remediate those issues as they occur. In 2018, line loss as a percentage of total energy was 3.46% for LG&E, 5.68% for KU, 6.48% for PPL Electric and 5% for WPD.
EU13	Biodiversity of offset habitats compared to the biodiversity of the affected areas	For information on habitat-protection efforts, see <a href="#">page 41</a> .
G4-DMA Skilled Workforce	Programs and processes to ensure the availability of a skilled workforce	For information on how PPL is ensuring the availability of a skilled workforce, see <a href="#">pages 60-61</a> .
EU15	Percentage of employees eligible to retire in next 5 and 10 years, broken down by job category and region	PPL has developed strategic workforce plans to identify key functions and proactively implement plans to assure a ready and qualified workforce. For information on generational diversity and turnover rates, see <a href="#">page 60</a> .
EU17	Days worked by contractor and subcontractor employees involved in construction, operation and maintenance activities	PPL does not publicly disclose this information.

Indicator	Description	Response
EU18	Percentage of contractor and subcontractor employees who have undergone relevant health and safety training	PPL provides required health and safety-related training for 100% of the contractors performing physical work on our electric and natural gas systems.
G4-DMA Water	At the watershed or hydrological basin level, include collaborative approaches to managing watersheds and reservoirs for multiple uses (e.g., irrigation, drinking water, ecosystem conservation, etc.). Also report long-term planning for securing water resources, for meeting the needs of both the utility and other stakeholders (e.g. local communities). This includes describing the criteria for managing maximum/minimum flow of surface water and volume of ground water and how these are determined and maintained.	For information on PPL's approach to water management, see <a href="#">page 39</a> .
G4-DMA Vegetation Management	Report approaches for pest and vegetation management along transmission and distribution corridors (e.g., use of Integrated Pest Management and Integrated Vegetation Management)	For information on PPL's approach to vegetation management, see <a href="#">page 32</a> .
G4-DMA Local Communities	Stakeholder participation in decision-making processes related to energy planning and infrastructure development	For information on stakeholder engagement, see <a href="#">pages 13-15</a> .
EU22	Number of people physically or economically displaced and compensation, broken down by type of product	We avoid displacement of anyone to the extent feasible by careful planning during the siting process of major projects. If displacement is unavoidable, we make fair compensation for any property transactions.
G4-DMA Emergency Planning	Contingency planning measures, disaster/emergency management plan and training programs, and recovery/restoration plans	For information on PPL's disaster and emergency management planning, see <a href="#">page 68</a> .
G4-DMA Customer Support Programs	Programs, including those in partnership with government, to improve or maintain access to electricity and customer support services	For information on customer programs, see <a href="#">pages 51-56</a> .
EU26	Percentage of population unserved in licensed distribution or service areas	PPL's utilities have an obligation to serve all that want electrical service in their service territory.
EU27	Number of residential disconnections for non-payment, broken down by duration of disconnection and by regulatory regime	In 2018, PPL's U.S.-based utilities had 196,886 residential disconnections.
EU28	Power outage frequency	For information on reliability, see <a href="#">page 85</a> .
EU29	Average power outage duration	For information on reliability, see <a href="#">page 85</a> .
EU30	Average plant availability factor by energy source and by regulatory regime	LG&E and KU's plant availability factor is 84.58%. The unplanned outage rate for LG&E and KU plants in 2018 was 6.05%.
G4-DMA Customer Access	Practices to address language, cultural, low literacy and disability related to barriers to accessing and safely using electricity and customer support services	For information on customer programs, see <a href="#">page 51-56</a> .

# PPL's contribution to the U.N. Sustainable Development Goals

As a multinational business, PPL understands we have a role to play in contributing to the U.N. Sustainable Development Goals (UNSDGs). As we developed our own sustainability commitments, we considered how they would support the UNSDGs in their objective to achieve a better world for all. PPL also participated in the United States Council for International Business' (USCIB) Business for 2030 – Forging a Path for Business in the UN 2030 Development Agenda initiative, which aims to promote opportunity for the private sector to drive progress toward sustainable development and act as a partner to help provide the financing and technical capabilities needed to achieve the SDGs.

## U.N. SUSTAINABLE DEVELOPMENT GOALS



## PPL COMMITMENTS

PPL COMMITMENTS	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	13 CLIMATE ACTION
Create extraordinary shareowner value			✓	✓	✓
Drive best-in-sector operational performance		✓		✓	
Advance a cleaner energy future	✓	✓			✓
Build tomorrow's energy infrastructure				✓	
Exceed customer expectations		✓		✓	
Foster an exceptional workplace			✓		
Strengthen communities		✓	✓	✓	

# APPENDIX

## Installed Capacity

Year	Total Owned Nameplate Generation Capacity at end of year (MW) <sup>[1]</sup>	Total Net Summer Rating at end of year (MW)	Coal Owned Nameplate Generation Capacity at end of year (MW) <sup>[1]</sup>	Natural Gas Owned Nameplate Generation Capacity at end of year (MW) <sup>[1]</sup>	Renewable Owned Nameplate Generation Capacity at end of year (MW) <sup>[1]</sup>
2014	9,174	8,087	6,583	2,477	113.4
2015	9,148	7,997	5,750	3,284	113.4
2016	9,157	8,011	5,750	3,284	123
2017	9,183	8,017	5,754	3,285	144
2018	9,183	8,017 <sup>2</sup>	5,754	3,285	144

<sup>[1]</sup> LGEKU Installed

<sup>[2]</sup> Includes OVEC to be consistent with 2017 submittal which was chosen as such to match the 10-K

## Energy Consumption and Output

YEAR	Owned Gross Generation (MWh)	Owned Net Generation (MWh) <sup>1</sup>	Total BTU Consumed at Plant	Generation Efficiency: (BTU/Owned Net Generation)	Percentage Change in Generation Efficiency	Small Plant Stationary (Subpart C) Combustion Sources (Liters)	Plant Mobile Fuel Combustion Sources (Liters)	Organization Building Electricity Use (kWh)	Organization Building Gas Use (kWh)	Organization Fleet Vehicle Energy Use (Liters)
2014	38,236,325	34,852,836	394,375,570	11.3	-0.21%	659,227,583***	1,882,854*	112,529,670*	101,445,325*	19,067,244*
2015	36,937,034	33,880,343	371,360,145	11.0	-3.13%	659,227,583***	1,882,854*	113,735,235*	101,156,024*	18,392,459*
2016	36,857,210	33,968,857	360,888,362	10.6	-3.07%	659,227,583***	1,882,854*	108,898,199*	101,078,573*	17,816,820*
2017	35,759,848	32,704,879	330,071,507	10.1	-5.00%	659,227,583**	1,882,854	116,693,279	101,227,880	17,919,631
2018	36,682,634	34,546,832	348,595,825	10.1	-0.02%	528,994,712	2,472,059	118,879,329	110,712,724	17,145,414

<sup>1</sup> Net Generation data excludes Purchase Power. Reflects 75% Trimble County Unit 1&2 ownership.

\* Estimated data for Kentucky Operations.

\*\* 2017 corrected and prior years' data estimated based on 2017 data.

## Carbon Emissions and Intensity

Year	Scope 1 (Gross MWh) (Includes CO <sub>2</sub> , N <sub>2</sub> O and CH <sub>4</sub> ): Metric Tonnes of CO <sub>2</sub> e	Scope 1 (Fleet Vehicles): Metric Tonnes of CO <sub>2</sub> e	Scope 1 (Small Plant Stationary Fuel Combustion Sources not included in Stack Emissions): Metric Tonnes of CO <sub>2</sub> e	Scope 1 (Plant Mobile Equipment) Metric Tonnes of CO <sub>2</sub> e	Scope 1 (Gas Operations): Metric Tonnes of CO <sub>2</sub> e	Scope 1 (Electric Substation and Distribution SF6): Metric Tonnes of CO <sub>2</sub> e	Scope 2 (Purchased Power Net of Wholesale): (MWh)	Scope 2 (Purchased Power Net of Wholesale): Metric Tonnes of CO <sub>2</sub> e	Scope 2 (Electricity Use in Buildings): Metric Tonnes of CO <sub>2</sub> e	Scope 2 (Gas Use in Buildings)*: Metric Tonnes of CO <sub>2</sub> e	Scope 3 (Electricity Purchased for End Use Customers): (MWh)	Scope 3 (Electricity Purchased for End Use Customers): Metric Tonnes of CO <sub>2</sub> e	Scope 3 (Gas Purchased for End Use Customers): MMCUFT	Scope 3 (Gas Purchased for End Use Customers): Metric Tonnes of CO <sub>2</sub> e	Total Goal Related Emissions: Metric Tonnes of CO <sub>2</sub> e	USD Million Sales (in millions)	Carbon Intensity Calculation <sup>1</sup> (CO <sub>2</sub> e/Revenue)	Owned Net Generation (MWh) <sup>3</sup>	Gross Generation Carbon Intensity by Net MWh Calculation <sup>5</sup> (CO <sub>2</sub> e/Net Generation)
Goal <sup>2</sup>	✓	✓	✓	✓		✓		✓	✓	✓									
2010	60,736,086***	48,343***	2,515	4,893*			114,727**	1,906,442	1,597,157	89,732*	18,250*	15,980,340	7,263,132	44,546	2,389,400	62,577,296			
2014	33,212,770	50,469*	3,209	4,893*	30,419	131,230	520,845	451,533	71,016*	18,378*	8,949,034	4,497,655	49,079	2,533,521	33,909,091	\$7,852	0.00432	34,852,836	0.95
2015	30,199,495	49,727*	5,610	4,893*	35,622	86,940	482,359	395,828	70,472*	18,326*	9,082,309	4,177,384	44,835	2,304,800	30,796,883	\$7,669	0.00402	33,880,343	0.89
2016	28,737,028	46,633*	32,645	4,893*	35,376	85,195	619,191	558,092	67,022*	18,311*	9,272,725	4,172,432	43,287	2,225,952	29,515,412	\$7,517	0.00393	33,968,857	0.85
2017	28,407,677	47,630	8,984	4,893	28,132	90,107	530,829	470,110	69,781	18,311	9,134,536	4,110,251	40,656	2,034,406	29,083,085	\$7,447	0.00391	32,704,089	0.87
2018	29,480,129	43,256	1,097	6,459	29,040	49,513	273,821	241,199	67,316	20,058	10,263,461	4,415,253	46,474	2,267,656	29,873,408	\$7,785	0.00384	34,546,832	0.85

<sup>1</sup> Total CO<sub>2</sub>e excluding Scope 3 purchased power/gas and gas operations.

<sup>2</sup> Our CO<sub>2</sub> Goal includes columns identified with a checkmark.

<sup>3</sup> Net Generation data excludes Purchased Power. Reflects 75% Trimble County Unit 1 & 2 ownership.

<sup>4</sup> Note: There is not a material difference in the conversion formulas utilized in our U.K. Operations (DECC Conversion Factor) vs. our Kentucky Operations (EIA's Conversion Factor).

<sup>5</sup> Total CO<sub>2</sub>e associated with gross generation divided by net generation.

\* Estimated data for Kentucky Operations.

\*\* Estimated data for Pennsylvania Operations.

\*\*\* 2010 Scope 1 Plant Emissions is the only data point that includes PPL Energy Supply, LLC.

## Emissions

Year	Owned Net Generation (MWh) <sup>1</sup>	Total NOx Emissions (Metric Tonnes)	Total NOx Emissions Intensity (Metric Tonnes / Owned Net MWh)	Total SO <sub>2</sub> Emissions (Metric Tonnes)	Total SO <sub>2</sub> Emissions Intensity (Metric Tonnes / Owned Net MWh)	Hazardous Air Pollutants (Total HG Emissions) (Kg)	Hazardous Air Pollutants Intensity (Total HG Emissions (Kg) / Owned Net MWh)	Particulate Matter (Metric Tonnes)
2014	34,852,836	31,644	0.00091	70,697	0.00203	*	*	4,209
2015	33,880,343	22,365	0.00066	40,075	0.00118	230	6.79E-06	4,168
2016	33,968,857	18,380	0.00054	16,398	0.00048	70	2.06E-06	2,634
2017	32,704,879	15,710	0.00048	13,499	0.00041	77	2.35E-06	1,900
2018	34,546,832	17,329	0.00050	16,698	0.00048	71	2.06E-06	2,241

<sup>1</sup> Net Generation data excludes purchased power. Reflects 75 percent Trimble County Unit 1&2 ownership.

\*Reporting began in 2015

**2018 Water Sources Affected by Withdrawal of Water**

Plant	2018 Withdrawal [megaliters/year]	% Impact (Water Withdrawn compared to Waterbody Size)	2018 Discharge [megaliters/year] <sup>1</sup>	Water body	Waterbody Size [Lake-megaliters] or [River-megaliters/day]	Consumption [Megaliters/year] (Withdrawal - Discharge)	Total Volume of Water Recycled and Reused as a Percentage of Total Water Withdrawal
KU-Brown	24,000	0.020%	17,000	Herrington Lake (created by Dix River Dam)	324,405*	7,000	70.83%
KU-Ghent	91,000	0.225%	92,000	Ohio River	110,829**	-1,000***	101.10%
LG&E-Cane Run	5,000	0.011%	1,300	Ohio River	119,882**	3,700	26.00%
LG&E-Mill Creek	352,000	0.804%	328,000	Ohio River	119,882**	24,000	93.18%
LG&E-Trimble County	40,000	0.099%	17,000	Ohio River	110,829**	23,000	42.50%
<b>TOTALS</b>	512,000		455,300			56,700	88.93%

<sup>1</sup> These numbers were calculated from annual averages of the NPDES-KPDES reported values for the (DMR) Discharge Monthly Reports or using process-specific flow information. Flows include discharges from ashponds, cooling tower blowdown streams, once-thru cooling flows and accumulated stormwaters within impoundments or collected/drainage process areas. These flows were returned to the same water bodies from which they were withdrawn; there are a number of other users located downstream and upstream of plant locations.

\* Volume of lake during 10Q7 low flow conditions.  
 \*\* Flow at relevant locations during 10Q7 low flow conditions.  
 \*\*\* Discharge exceeds withdrawal due to rainfall.

**Ash Use Trends**

Year	Ash-Use Trends: Production <sup>1</sup> (Million Metric Tonnes)	Ash-Use Trends: Reuse <sup>1</sup>	Generation (MWh net) <sup>2</sup>	Ash-Use Trends (Metric Tonnes / Net MWh)
2014	1.377	22.5%	34,852,836	0.040
2015	1.184	25.7%	33,880,343	0.035
2016	1.134	34.2%	33,968,857	0.033
2017	1.113	34.1%	32,704,879	0.034
2018	1.059	33.5%	34,546,832	0.031

<sup>1</sup> Includes Kentucky operations only.  
<sup>2</sup> Net Generation data excludes purchased power. Reflects 75 percent Trimble County Unit 1&2 ownership.

**Waste**

Year	Hazardous Waste <sup>3,4</sup> (Total Tonnes)	Non-Hazardous Waste <sup>5</sup> (Total Tonnes)
2014	347.68	11,329.87
2015	460.2	16,099.39
2016	743.97	136,124.63
2017	829.03	45,347.15
2018	790.67	25,684.24

<sup>3</sup> All Operations.  
<sup>4</sup> Poles are designated as hazardous waste in the U.K.  
<sup>5</sup> Includes Pennsylvania and U.K. operations only. Note: Kentucky does not track Non-Hazardous Waste other than ash.

## 2018 Safety

	2016	2017	2018
Total Hours Worked	24,700,051	24,157,564	23,602,105
Number of lost day cases	24	18	15
Lost Time Incident Rate	0.19	0.15	0.13
Recordable Incident Rate	1.297	1.08	1.18
Work related fatalities	0	1	0

## 2018 Reliability

### SAIFI - System Average Interruption Frequency Index

	2016	2017	2018
LG&E and KU	1.04	0.84	0.92
PPL Electric	0.70	0.60	0.73
WPD	0.52	0.50	0.53

SAIFI is the average number of interruptions per customer, excluding major events, per IEEE definition 1366.

### SAIDI - System Average Interruption Duration Index

	2016	2017	2018
LG&E and KU	100.47	75.41	95.24
PPL Electric	71.23	69.68	80.60
WPD	28.28	29.29	30.71

\*SAIDI is the average outage duration (in minutes), excluding major events, per IEEE definition 1366.

### CAIDI - Customer Average Interruption Duration Index

	2016	2017	2018
LG&E and KU	96.53	89.92	103.17
PPL Electric	101.98	115.61	110.29
WPD	55.50	58.09	57.99

\*CAIDI represents the average time (in minutes) required to restore service after a sustained interruption occurs, per IEEE definition 1366.



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