ENERGY FORWARD

PPL's 2021 Climate Assessment Report

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A Message from Our CEO

At PPL, we are committed to delivering a net-zero carbon future while keeping energy reliable and affordable for our customers and communities. Achieving these priorities won't be easy. The challenges ahead are complex, and the solutions will require historic investment, innovation and collaboration.

But every challenge presents opportunity, and the clean energy transition is no exception.

The transition offers us an opportunity to rethink how energy is produced, stored, delivered and used. In the process, it offers opportunities for us to further reduce our environmental impact, invest in new infrastructure, empower customers with new options, and drive innovation that benefits society.

As we continue to position PPL for growth in this clean energy transition:

- We've set a clear goal to achieve net-zero carbon emissions by 2050, with interim reduction targets of 80% from 2010 levels by 2040 and 70% by 2035.
- We're pursuing a broad-based clean energy strategy focused on decarbonizing our operations, investing in clean energy research and development, and enabling third-party decarbonization through smart networks.
- We're working with industry and policymakers to support necessary funding for energy infrastructure and research.
- We're keeping shareowners informed of our progress through transparent disclosures, including our Sustainability Report, EEI-AGA Report, CDP Questionnaire and Climate Assessment Reports.

In our 2021 Climate Assessment Report, we highlight risks and opportunities associated with climate change. We evaluate potential future emissions under multiple scenarios, including a scenario consistent with limiting global warming to 1.5° Celsius. And we outline our strategy and goals to enable a responsible transition that balances our commitments to the environment, our customers, our employees and our communities.

I'm proud of the progress PPL has made to date in executing this strategy – reducing our emissions nearly 60% since 2010. I'm pleased with the momentum we continue to build in 2021. This has included investing an additional $50 million to drive innovation in the clean energy space, launching a new partnership to study carbon capture at natural gas combined-cycle power plants, reaching new agreements to provide 125 megawatts of solar power to major Kentucky customers, and joining the Electric Highway Coalition to support greater adoption of electric vehicles.

I'm also very excited about the opportunities that lie ahead as we continue to develop one of the most advanced, clean-energy-enabling grids in the U.S. at our Pennsylvania operations; as we seek to replicate this success across our expanding regulated portfolio; and as we continue to transition our Kentucky coal-fired generation with an expected 2,000 megawatts of coal plant retirements over the next 15 years and replace it with non-emitting generation.

As we move forward with these initiatives and advance the clean energy transition, it's important that the industry and our stakeholders stay closely connected and clear-eyed on the challenges we must overcome to achieve net-zero while maintaining energy reliability and affordability. We look forward to the continued dialogue this report will foster in that regard. And I am optimistic that working together, we can and will achieve a net-zero future.

Sincerely,

Vince Sorgi

Executive Summary

PPL's 2021 Climate Assessment Report, a comprehensive update of our 2017 report, takes into consideration international views on climate, new U.S. policies under consideration and recent changes to PPL's business mix.

This report is based on the four pillars of the Task Force on Climate-Related Financial Disclosures (TCFD) model framework and incorporates many of the recommendations set forth through implementation guidance. We continually work to incorporate TCFD's evolving implementation guidance through our sustainability efforts in order to inform our approach to supporting a clean energy transition and to communicate with our stakeholders in a transparent and consistent manner.[1] Our objectives for this report are the following:

- Describe governance and management methods to support a clean energy transition strategy.
- Articulate PPL's awareness of climate change impacts and understanding of related risks and opportunities.
- Show progress to reduce the company's climate change emissions and demonstrate scenario analysis to benchmark against 1.5°Celsius emission pathways and Paris Agreement-aligned commitments.
- Support the company's responsiveness and transparent reporting to shareowners and other stakeholders.

Our Approach to Climate Change

PPL's corporate governance and management practices are designed to help ensure long-term value for our shareowners, customers and the communities in which we operate. We have adopted a goal to reduce our carbon emissions to net-zero by 2050 and linked executive incentive compensation to several goals aimed at climate-related and ESG performance.

PPL is developing a strategic framework with the goal of positioning the company to help advance a clean energy future within our service territories and across the broader U.S. Our transition strategy is fundamentally centered around four key areas that we believe will enable us to advance new opportunities for the company and help deliver a net-zero economy by 2050:

- Decarbonize our electricity generation.
- Decarbonize our non-generation operations.
- Advance research and development.
- Enable third-party decarbonization.

We view our path to net-zero emissions on a continuum, with a primary focus on eliminating our gross emissions, leveraging technology to remove emissions where they cannot be eliminated due to cost or reliability constraints, and finally, considering carbon offsets for any remaining emissions as the least-preferred option.

[1] *In addition to this report, PPL publishes several voluntary corporate sustainability disclosures. Our mapping of additional data and metrics to the TCFD framework and its pre-October 2021 implementation guidance, as well as additional details regarding PPL's work to advance a cleaner energy future, can be found at www.pplsustainability.com.*

We recognize that the urgency to change our nation's energy mix to address climate impacts will need to be balanced by the need for affordable and reliable power. The diverse perspectives of our varied stakeholders help to inform our approach to the risks and opportunities climate change presents.

Our holistic approach to planning, continued investments in our energy grid, use of data analytics and technology to drive reliability, and research into clean energy technologies are enabling us to deliver results today while working toward a long-term and sustainable clean energy transition.

Our Analysis

Emissions from generation resources we own represent the largest component of PPL's carbon emissions footprint and corporate-wide carbon reduction goal. Our climate assessment therefore focuses on three distinct future generation-related transition scenarios and a discussion of potential impacts:

- A Current Policies Scenario establishing PPL's future carbon emissions trajectory and potential range of reductions assuming no new regulatory requirements.
- A 1.5°C Scenario using an Intergovernmental Panel on Climate Change (IPCC) global climate mitigation pathway.
- A Fast Transition Future Policy Scenario considering the assumed power sector contributions under the U.S. Nationally Determined Contributions (NDC) to the Paris Agreement.

Key Takeaways

PPL's Current Policies Scenario analysis considers varying assumptions regarding changes in customer demand, as well as the relative economics of available technologies moving forward, the latter being driven primarily by the pace of technology development and commodity prices. PPL considered different variables in these areas given the inherent uncertainty in predicting future conditions.

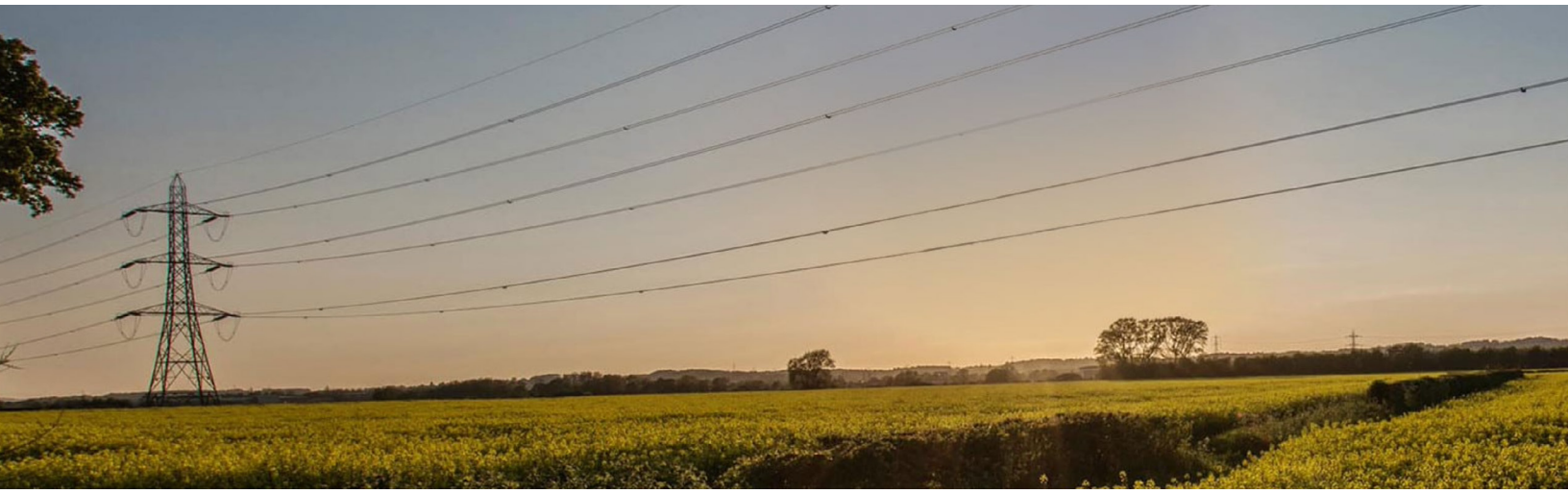
Scenario analysis results show that PPL's projected emissions from generation result in as much as an 85% reduction from 2010 levels by 2040 and net-zero emissions by 2050 at the low end of the emissions range. Reaching net-zero emissions in 2050 assumes that renewables and other non-emitting resources supported by clean energy technologies are widely and economically available.

However, policies that accelerate the pace and depth of reductions assumed in our fast transition future policy scenario would require significant changes to our energy portfolio. We believe that this pace of change would require an unprecedented level of technology advancement and investment in clean energy, not just at PPL, but across the economy.

Moving Forward

We will continue to make major investments across our transmission and distribution operations to mitigate weather-related climate risks and make the grid more reliable and resilient. Further, we will seek to align future capital investments with our clean energy transition strategy, including progress toward our net-zero carbon emissions goal. We are also leveraging smart grid technologies to actively manage our system and integrate distributed energy resources. And we are growing our clean energy portfolio while responsibly and economically retiring aging generation. Our partnerships and direct investments in clean energy research and development underscore our commitment to supporting economywide decarbonization.

PPL will continue to assess risks and opportunities associated with climate change. The analysis presented in this climate report is performed at a point in time with a certain set of assumptions. In practice, we are regularly engaged in short- and long-term planning across our business. In addition, we will continue to engage on related public policy matters and with our stakeholders to ensure we can respond effectively to future changes in policy and regulation as we strive to deliver value to our shareowners, customers and the communities we serve.



Introduction to PPL

ABOUT OUR COMPANY

PPL Corporation and our family of companies provide essential energy services to more than 2.5 million customers. We provide an outstanding service experience for our customers, and our companies consistently rank among the best utilities in the U.S.

As the energy grid evolves, so do we. We are modernizing the energy grid to enable more distributed energy resources (DERs), including renewable generation, on our networks. We are developing solar for customers across the U.S., and we are also taking steps to advance a cleaner energy mix.

We seek to be a positive force in the cities and towns where we do business, and the spirit of volunteerism and philanthropy runs deep at PPL. Our more than 5,600 employees generously volunteer their time and energy to help others. We also partner with hundreds of nonprofit organizations and provide financial support to help develop a strong, skilled workforce, revitalize our communities and enhance education.

Through the sale of PPL's U.K. distribution business in June 2021 and the planned acquisition of The Narragansett Electric Company, we are positioning ourselves for long-term growth and success by simplifying our business mix, strengthening our credit metrics, improving our prospects for long-term earnings growth, and creating greater financial flexibility to invest in sustainable energy solutions.

As PPL strategically repositions itself as a leading, high-performing, U.S.-focused energy company, we believe there will be additional opportunities to deploy capital into our utilities and renewables business in a disciplined manner that helps create long-term value for shareowners and supports the clean energy transition.

Our Structure

Headquartered in Allentown, Pennsylvania, PPL Corporation is the parent company to three regulated utility companies. Covering more than 19,000 square miles with more than 83,000 miles of electric and gas lines. PPL's regulated utilities provide electricity and natural gas to power our customers' lives.

Through our regulated utilities, we deliver electricity to approximately 1.4 million customers in eastern and central Pennsylvania and 1 million customers in Kentucky and Virginia. We also deliver natural gas to approximately 330,000 customers and operate more than 7,500 megawatts of generation in Kentucky. In addition, PPL is the parent company to Safari Energy, LLC, a leading provider of solar power solutions for commercial customers in the U.S. with more than 500 commercial-scale solar projects completed.

PPL previously owned Western Power Distribution (WPD), which is the U.K. electricity distribution network operator serving nearly 8 million end-use customers the East and West Midlands, South West England and South Wales. Under PPL's past ownership, WPD delivered operational excellence, superior customer satisfaction and innovative solutions to advance a cleaner energy future.

PPL in March 2021 announced its planned agreement to acquire Rhode Island's primary electric and gas utility, The Narragansett Electric Company, from National Grid for approximately $3.8 billion. The acquisition remains on track to close as expected by March 2022.

Our Strategy

PPL's strategy is focused on creating value for all stakeholders and centers on five strategic objectives to enable long-term growth and success:

- Achieve industry-leading performance in safety, reliability, customer satisfaction and operational efficiency.
- Advance a clean energy transition while maintaining affordability and reliability.
- Maintain a strong financial foundation and create long-term value for our shareowners.
- Foster a diverse and exceptional workplace.
- Build strong communities in the areas we serve.

How We Do Business

We Excel in Customer Satisfaction

Delivering electricity and natural gas safely and reliably is our No. 1 priority. PPL's businesses are recognized as among the very best in customer satisfaction. PPL Electric Utilities Corporation (PPL Electric), Louisville Gas and Electric Company (LG&E), and Kentucky Utilities Company (KU) have repeatedly been recognized among the top of their class for customer satisfaction with more than 50 J.D. Power Awards combined. Two of PPL's utilities were recognized by Escalent as Most Trusted Utility Brands in 2021.

We Are Building a Smarter, More Secure Energy Grid

PPL is driven by a determination to ensure that each of our customers has the power they count on every day. Fulfilling that commitment takes dedication, hard work and resources. PPL invested more than $30 billion over the past decade *(including U.K. operations)* to strengthen energy grid resilience in the face of future storms, reduce power plant emissions and prepare our networks to better integrate more DERs. Looking forward, we expect to continue to make investments that help deliver energy safely, reliably and affordably, as well as provide increasingly cleaner energy.

We Are Powering the Future

The energy grid is undergoing rapid transformation, and PPL's businesses strive to address new challenges head-on. The clean energy transition requires advancements in our generation, transmission and distribution businesses. On the generation side, it entails economically retiring our coal fleet and replacing that generation with cleaner alternatives, including renewables, non-CO_2 emitting technologies and battery storage. On the transmission side, it entails building out new transmission lines to connect large-scale renewable energy projects to the load zones where that energy is needed. And, on the distribution side, we are leveraging technology to enable a more flexible, two-way flow of electricity. This improves reliability and enables the distribution grid to host more DERs like solar and energy storage without the need for expensive grid upgrades.

PROGRESS SINCE OUR LAST REPORT

In 2017, PPL conducted a detailed assessment of how future requirements and technological advances aimed at limiting global warming could impact PPL.

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 as set forth in the International Energy Agency's 450 Scenario. A report of this assessment is publicly available on PPL's website.

The 2017 scenario analysis showed that CO_2 emissions in Kentucky would be expected to decline dramatically by 2050 as aging generation units are retired and replaced with a mix of renewable and natural gas generation. The analysis showed more limited CO_2 reductions by 2030. In the absence of new policies, the general trajectory and range of emissions reductions expected from our generation fleet have largely been consistent with the ranges outlined under different retirement cases in our 2017 climate assessment.

PPL has taken a number of steps to advance our emissions reductions and overall clean energy transition strategy, which are discussed throughout this report. Highlights include adoption of a net-zero emissions goal, planned retirements of aging fossil plants, aligning executive compensation with ESG and climate-related metrics and reimagining energy delivery through investments in innovation and research and development.

PATH TO OUR 2050 NET-ZERO CARBON EMISSIONS GOAL

Analysis performed during the 2017 assessment formed the basis for PPL's first carbon reduction goal – an enterprise-wide goal to cut carbon (CO_2e) emissions 70% by 2050 from a 2010 baseline – and put the company on a deliberate path to help deliver a clean energy future for our customers.

In 2020, PPL adopted a more aggressive carbon reduction goal of at least 80% by 2050 and accelerated its previous 70% goal by 10 years to 2040 (see Metrics and Targets). Actions to date have reduced scope 1 and 2 carbon emissions covered by our goal by nearly 60% from 2010 to 2020.

During 2021, the company undertook two key initiatives in addition to this climate assessment to inform our generation planning and corporate clean energy transition strategy. LG&E and KU developed an updated integrated resource plan in Kentucky, and the corporation is undertaking an in-depth analysis of our clean energy transition strategy with the help of a leading global energy consultant. As a result of our ongoing, focused analysis, PPL modified its carbon reduction goal to net-zero by 2050, with 80% reduction by 2040 and 70% reduction by 2035.

To help achieve these reductions and support our net-zero-by-2050 goal, PPL has a four-part clean energy strategy aimed at decarbonizing our owned generation and operations, bringing smart grid technology and renewable energy solutions to our customers, and investing in research and development necessary to support the deployment of affordable and reliable clean energy technologies (see Strategy).

SIGNIFICANT ACQUISITIONS, DIVESTITURES AND BUSINESS DEVELOPMENTS

In 2018, PPL acquired Safari Energy, LLC, along with its solar generation projects spanning 24 states and Washington, D.C. Since the acquisition, PPL has expanded Safari's business model – previously limited to building and selling solar projects to large commercial customers – to include developing, acquiring and owning solar projects.

In 2019, LG&E and KU retired two units at the E.W. Brown plant, increasing the total retired coal-fired generation to 1,200 megawatts since 2010.[2] The companies expect to retire an additional 1,000 megawatts of coal-fired power plants in Kentucky by 2028, earlier than had been anticipated in the 2017 analysis. In 2020, LG&E and KU executed a 100 MW purchase power agreement ("PPA") with a developer for a new solar facility expected to be operational in early 2023. In late 2021, LG&E and KU executed a PPA for an additional 125 MW of solar generation expected to be operational in 2025. These PPAs support our customers' interest in renewable generation and will enable us to meet our obligations to serve our Kentucky customers' energy needs in the most reliable, least-cost fashion.

PPL is in the process of seeking regulatory approval to acquire Rhode Island's primary electric and gas utility, The Narragansett Electric Company. Rhode Island has set ambitious decarbonization and renewable goals, including legislation that requires a net-zero carbon economy by 2050 and an executive order by the prior governor establishing a 100% renewable energy goal by 2030. These goals are complementary with PPL's clean energy strategy and will provide PPL with the opportunity to leverage its experience in deploying smart grid solutions to enhance DER and renewables deployment in Rhode Island.

Lastly, as previously noted, PPL completed the sale of its U.K. electric distribution business in June 2021.

[2] *PPL made a strategic decision to exit competitive generation in 2015, including over four gigawatts of coal-fired generation. Emissions from this generation are included in PPL's 2010 goal baseline.*

PPL's Approach to Climate Change

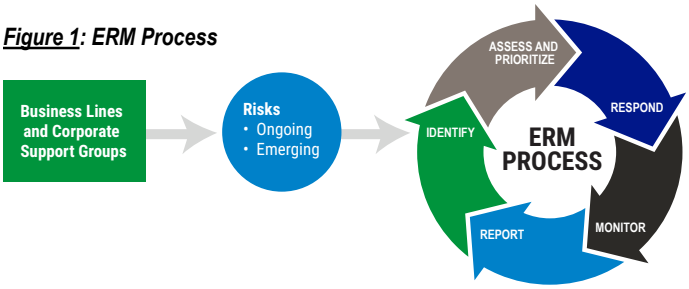
Providing sustainable energy to our customers is rooted in PPL's corporate mission, business strategy and sustainability commitments. We strive to economically and sustainably transition to cleaner energy sources through innovation, responsible resource management and investments in infrastructure that support a more reliable, resilient and efficient energy grid. Core to our strategy is understanding our business risks and opportunities and conducting disciplined planning for long-term success.

GOVERNANCE

Assessing and Managing Risk

Risk affects an organization's ability to achieve its strategy and business objectives. PPL employs enterprise risk management (ERM) as a comprehensive and integrated process for managing key risks to support the organization's achievement of its strategy and business objectives and maximize its enterprise value (Figure 1). Climate-related issues are incorporated into PPL's ERM and business strategy processes and communicated to PPL's Board and senior management.

***Figure 1*: ERM Process**



Oversight and Integration into Strategy

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

PPL's Board of Directors reviews climate and environmental, social and governance (ESG) issues as part of corporate strategy discussions, including the company's clean energy transition strategy and the adoption of and progress toward carbon emissions-related goals. The full Board is informed by company leadership, outside experts and Board-level committees. Several Board-level committees oversee climate-related issues within their respective areas of focus and provide reports to the full Board (Figure 2).

***Figure 2*: Board Committee Oversight of Climate-Related Issues**

Governance and Nominating Committee	Oversees the company's sustainability-related policies and practices; reviews key corporate sustainability disclosures and receives regular sustainability and ESG reports, including discussion of key climate and clean energy trends, risks and opportunities.
Audit Committee	Receives quarterly reports on enterprise risk management. The Audit Committee regularly reviews risk management activities, including issues related to the transition of the utility sector, such as sustainability and climate-related issues, as well as activities related to the company's financial statements and disclosures, and certain legal and compliance matters.
Finance Committee	Annually reviews and approves a multi-year business plan and capital expenditure plan. The Finance Committee also approves major capital financing, acquisitions and divestitures. Climate-related issues are addressed in the business and capital plans.
Compensation Committee	Reviews and approves annually the compensation structure, including ESG goals and objectives, for the company's executive officers.

The Corporate Leadership Council (CEO, COO, CFO, GC, CHRO, collectively "CLC") provides management and oversight of the company's overall risk management practices and business strategy, including the company's clean energy transition plans, targets and metrics. Guided by PPL's Investor Relations, CLC and other company leaders inform our investors of the company's business strategy, clean energy transition plans and progress toward climate goals.

Progress toward the company's 2050 net-zero emissions goal is included in executive compensation. The Board's Compensation Committee approved an incentive mix for CLC and other top executives that includes goals tied to priority ESG areas and climate-related performance, including goals linked to coal plant retirements, fleet electrification and building energy use.

PPL's Risk Management group reports to the executive vice president and chief financial officer and oversees the ERM process. Additional management committees, including a corporate sustainability committee chaired by the vice president – Public Affairs and Sustainability, ensure that PPL is effectively managing, monitoring and disclosing key ESG risk areas. CLC and company presidents review all corporate sustainability disclosures and receive updates and reports from ERM and sustainability management throughout the year and as important matters arise.

Engaging with Our Stakeholders

PPL engages with its stakeholders regularly and values the insights they provide as we work to deliver results for today and set strategic goals for the future. The diverse perspectives of our varied stakeholders help inform our approach to the risks and opportunities climate change presents.

We also understand the responsibility of balancing the reliability and affordability our customers expect with the increasing calls from investors, regulators and policymakers for carbon-free generation, grid innovation and technological advancements.

Policymakers and Advocacy

One pillar of our corporate strategy is advancing a clean energy transition while maintaining affordability and reliability, and PPL's advocacy efforts support this strategic objective. We voluntarily disclose our corporate political contributions and trade association activity on our corporate website, including positions related to climate policy.

With respect to climate change policy, PPL recognizes that to be effective, U.S. climate policy needs to be national and economy-wide in scope, with a focus on market-based solutions and incentives rather than simply the regulation of individual emissions sources. In addition, PPL believes that climate change policy should provide regional and state flexibility and equally value all forms of carbon reduction to achieve deep and lasting decarbonization in the most efficient way.

PPL recognizes that achieving our net-zero carbon emissions goal by 2050 will require new ideas, technology and systems to deliver power safely, reliably and affordably for our customers. Accordingly, PPL is investing in research and development of clean energy technologies. In addition, we are supporting the appropriation of significantly more resources to support the next generation of low-carbon electric resource technologies and low-carbon energy carriers such as hydrogen, ammonia, synthetic fuels and biofuels. Furthermore, federal renewable energy tax credits have been, and likely will continue to be, one of the most significant federal policies driving investments in clean electricity generation. PPL is working with federal policymakers to help ensure that all non-emitting generation and storage technologies qualify for federal tax credits, and that regulated utilities have the flexibility to use these credits in a manner that maximizes the economic viability of carbon-free generation and storage projects. Finally, the company also supports efforts to electrify other sectors of the economy and believes that federal energy and climate policy needs to encompass economywide efforts.

At the state level, PPL is engaging with policymakers and other stakeholders to support regulatory policies that foster greater innovation and support a more flexible, adaptable power grid necessary for economywide decarbonization. And, we are working with regulators to support cost-effective solutions to meet residential and business customer demand for renewables.

Progress toward the company's 2050 net-zero emissions goal is included in executive compensation. The Board's Compensation Committee approved an incentive mix for CLC and other top executives that includes goals tied to priority ESG areas and climate-related performance, including goals linked to coal plant retirements, fleet electrification and building energy use.

Investors

Investors are increasingly seeking information on key ESG factors that can impact a company's long-term performance. PPL is committed to transparent disclosure of the risks and opportunities we face as we address climate change and transition to a cleaner energy future.

We believe that the most effective way to communicate with our investors is to supplement our quarterly earnings webcasts and dedicated investor relations website with direct engagement in meetings and phone calls throughout the year.

In addition, we provide a variety of voluntary disclosures to meet the direct needs of investors and strive to improve the quality of our reporting using ESG standards and frameworks. Our reporting in this area includes the following, all of which are readily available under PPL's sustainability section on our website:

- Reporting sector-specific ESG metrics using a reporting template developed through a joint-reporting initiative of the Edison Electric Institute and American Gas Association.
- Annually publishing a comprehensive corporate Sustainability Report and Global Reporting Initiative index.
- Aligning our climate-related disclosures with many of the recommendations of the TCFD, including participating in the CDP climate survey.[3]
- Mapping our corporate ESG disclosures to the Value Reporting Foundation's SASB Standards.

Responsible Clean Energy Transition

How we achieve a clean energy transition matters, and PPL recognizes that a just transition considers impacts on our employees, communities and customers.

Ensuring the long-term resiliency and sustainability of the communities we serve is a key factor not only in how we conduct our day-to-day operations, but also in our strategy to move forward to a clean energy future. As we work to integrate DERs; site, build and maintain more resilient and reliable infrastructure such as transmission lines and natural gas pipelines; and retire aging power plants, we are helping to ensure a balanced, responsible and clean energy transition.

We consider environmental and economic factors that impact employees, communities and customers when assessing and planning development activity. These factors are consistent with our mission and values of being environmentally conscious, investing in our community, and providing affordable service. Environmentally, properties are assessed for endangered species, biodiversity, impact to water resources and cultural- and heritage-related concerns as part of our siting process. Economics often drive projects toward public, commercial and agricultural properties, rather than residential properties. Our operating companies have a history of community engagement and public meetings to support development activities.

With power plants providing hundreds of well-paying jobs and ongoing tax revenues for the communities in which they are located, we know that the retirement of a power plant can have a significant impact on employees and the community. To help ensure a just transition for our employees and the communities we serve, attention is given to retiring power plants in a way that aims to be the least disruptive to the local economy. We engage with regulators, customers, employees and the community early and often during a multi-year process.

Employees

PPL is committed to operating in ways that help promote, protect and support human rights in the communities in which we do business.

Beyond complying with federal, state and local laws and regulations applicable to human rights, PPL's *Standards of Integrity* and *Supplier Code of Conduct* provide a framework for operations that reflect these values and principles, not only for our own operating companies but for vendors and suppliers as well, including:

- Treating employees with respect and dignity, with the goal of providing a work environment that is free from harassment and unlawful discrimination. PPL's companies seek to provide work hours, wages and benefits in compliance with applicable laws.
- Striving to uphold human and workplace rights in all operations, and to treat workers fairly and without discrimination.
- Recognizing and respecting employees' freedom of association and collective bargaining. Where employees are represented by a properly certified labor union, PPL complies with collective bargaining obligations and agreements.
- Respecting the rights of people in communities in which we operate and striving to conduct business in ways that protect the environment and mitigate adverse impacts from our operations.
- Opposing child labor and forced labor, and complying with applicable laws prohibiting exploitation.
- Requiring suppliers to comply with all legal requirements and expecting adherence to high ethical standards in the areas of freely chosen employment; working hours; respect in the workplace; wages and benefits; and health and safety.

As the way we generate electricity undergoes changes, so do our workforce needs. Our employees are notified in advance of potential plant closures, and our plans are designed to minimize the impact to our employees.

To ease the transition for employees, we engage with labor unions and staff to mitigate job reductions through normal attrition, relocations and retraining for new roles both within and outside the company. We also provide mentoring and encourage job shadowing of individuals in other business units as professional development.

In 2015, for example, we retired the three coal-fired units at our Cane Run Generating Station and installed a natural gas, combined-cycle power plant. Only 32 full-time staff were required to operate the new plant. During the transition, LG&E and KU were able to reposition some staff to other roles in the organization and to manage the remainder through voluntary retirement and attrition. All staff were provided an opportunity to meet their employment needs.

[3] *PPL's climate disclosures, as of the date of this Climate Assessment Report, disclose against the TCFD recommendations before the date of the October 2021 supplemental guidance.*

Communities

We believe that for our company to be successful, the communities we serve must be successful. With philanthropic programs in each operating region, our charitable investments aim to help meet the needs of our communities. Working with nonprofit and community partners, our philanthropic investments support many efforts helping to drive communities forward through programs focused on diversity, equity and inclusion; equitable education; economic and workforce development; health and safety and sustainable local community projects.

PPL is engaged in economic development efforts with a view to supporting the clean energy transition beyond the borders of our generation plants and other operations. For example, the recent announcement from a leading automobile manufacturer to build two electric-vehicle battery manufacturing facilities in Kentucky is expected to result in more than 5,000 new jobs in the commonwealth alone. This is a significant development for clean energy jobs supported by our ability to provide competitive, reliable and increasingly clean energy solutions. Governor Beshear and the Kentucky Office of Energy Policy's recently released resilient energy strategy underscores workforce development as a key component of sustainable economic development for Kentucky.[4] LG&E and KU participated in working groups associated with affordability and economic development in the lead-up to the strategy announcement and expect to be engaged in discussions on this and other important topics included in the energy strategy framework.

We recognize that our infrastructure projects have the potential to significantly impact local communities. We leverage more than a century of experience developing and maintaining the systems that keep electricity and natural gas flowing, and we have long-established practices to ensure we are focused on engagement, access, affordability and community support in every project we develop. These practices include:

- Using environmental screening to identify all communities impacted by projects under development.
- Seeking early and frequent stakeholder engagement, including public open houses and public feedback surveys.
- Communicating with plant advisory committees and plant neighbors.
- Providing timely and transparent information.
- Working with local community leaders.
- Expanding community support and development efforts.

Across our service territories, our teams work with various partners as we aim to minimize our operational impact on sensitive resource areas, protecting biodiversity and ecosystems. We implement comprehensive Avian Protection Plans to help prevent birds from contacting electrical equipment and power lines and have adopted processes to promote native vegetative growth. In addition, we offer grants to environmental conservation organizations for community revitalization; support research and development projects related to pollinator habitat protection; work to identify and protect species of concern in proposed work areas; and provide trees and pollinator-friendly plants to county and municipal parks, environmentally focused groups and schools through various distribution programs. Since their inception, PPL's community tree planting programs in Kentucky and Pennsylvania resulted in the sequestration of nearly 1,700 metric tons of CO_2 through 2020.

Customers

We provide a variety of programs designed to meet the needs of customers, whether they are large industrial customers monitoring their own emissions and considering renewable energy purchases, small businesses looking for ways to be more energy efficient or low-income residential customers hoping to reduce their energy bills. We also support our most vulnerable customers through direct financial assistance and flexible payment options.

[4] https://eec.ky.gov/Energy/Documents/KYE3_Final_10.18.2021.pdf

We strive to exceed our customers' expectations. That includes keeping our energy affordable and giving our customers options to reduce their energy use. PPL's operating companies engage customers through a variety of rebate programs, energy efficiency workshops, video and social media profiles highlighting customers' energy savings, and in-school curricula that teach students the importance of energy, natural resources and environmental protection. Collectively, PPL's energy efficiency programs enabled customers to save over 2 million megawatt-hours of electricity from 2017 to 2020, the equivalent of avoiding nearly 1.1 million metric tons of CO_2e.

In addition to direct customer engagement programs, the companies conduct community outreach programs, such as tree planting programs, sponsorships of environmental programs with community partners and collaboration with industry and academic partners. We believe engagement across all customer classes and our sustainability disclosures and online tools ensure all customers have the information they need regarding energy efficiency, PPL's carbon goals and how we can help customers achieve their own sustainability goals.

ASSESSING AND ACTIVELY MANAGING RISK

As part of the ERM process, representatives from PPL's business lines and corporate support groups identify, assess, prioritize, monitor and report on both ongoing and emerging risks. In addition to assessing risks through our ERM processes, PPL's operating companies assess and manage risks through the ongoing business planning process. We have provided a detailed summary of our assessment of potential portfolio impacts from physical and transition risks (Tables 1 and 2, in the Appendix). These risks are discussed further in the context of our business and operational planning and transition strategy.

Comprehensive Planning to Manage Risks and Drive Opportunities

Comprehensive planning processes drive our operating companies' business plans and five-year capital plans. This planning is increasingly informed by advances in technology, such as smart grid technology, that enables us to gather and analyze a wealth of data from our transmission and distribution systems and transform this data into actionable insights that improve decision-making and help us prioritize investments.

Our operating companies' business planning activities cover electricity and natural gas transmission and distribution (T&D), as well as the generation of electricity. Planning horizons vary by system (T&D, generation) and range from 5-year to 15-year outlooks. Additional details follow.

T&D Planning

Across our enterprise, PPL's operating companies conduct transmission and distribution planning each year to maintain compliance with federal, state and industry standards; enable us to deliver energy safely and reliably; and position PPL to support the clean energy transition.

PPL's planning focuses on strengthening grid resilience to reduce damage and speed recovery from severe weather impacts that could result from climate change. It also incorporates smart grid technology to reliably and efficiently integrate increased DERs, including renewable generation and energy storage.

PPL Electric and LG&E and KU use a five-year asset planning model to prioritize transmission and distribution capital allocation, as well as operation and maintenance activities.

PPL Electric also projects a 10-year plan that is submitted to the PJM Interconnection, the regional transmission operator, for inclusion in PJM's annual Regional Transmission Expansion Plan (RTEP) process. RTEP identifies system additions and improvements needed to keep power flowing reliably throughout the PJM region.

LG&E and KU develop a 10-year Transmission Expansion Plan, coordinating closely with their independent operator, TranServ International Incorporated; their Stakeholder Planning Committee; and their reliability coordinator, the Tennessee Valley Authority, to ensure the companies' ability to meet existing and future requirements. In addition, they actively participate in the Southeast Regional Transmission Planning process.

T&D planning considers a wide variety of factors, including load forecasts, facility ratings, expected generation, data received from customers regarding their load growth, inputs from severe weather events, and insights gained from analyzing the increasing amount of data we can collect to monitor changing conditions on the energy grid and assess the adequacy of our systems and equipment. For example, using corrosion rates and other data we can reliably predict when equipment might fail and replace it proactively. We use LIDAR technology to map trees along transmission rights-of-way and predictive data science to map vegetation risk and better target our efforts to improve reliability without increasing costs.[5] In addition, we can monitor waveforms recorded by relays to proactively identify when electrical equipment is at a higher risk of failure.

Integrated Resource Planning in Kentucky

In Kentucky, LG&E and KU routinely evaluate the best ways to serve customers under a wide range of scenarios. These scenarios evaluate uncertainties regarding future load, how customers use electricity, customer preferences for clean energy, fuel prices, fuel availability, potential environmental costs and other factors.

The purpose of the Integrated Resource Planning (IRP) process is to assess future options for LG&E and KU to meet their regulatory obligations to provide reliable electric service at the lowest reasonable cost. Through this process, LG&E and KU model options to meet current and future demand reliably and affordably.

[5] *The Association of Edison Illuminating Companies (AEIC) selected PPL Electric as a winner of one of its 2021 AEIC Achievement Awards — the organization's most prestigious annual honor — for revolutionary work in vegetation management.*

The Integrated Resource Planning process begins with 30-year forecasts of customers' energy needs. LG&E and KU use information from a variety of sources to develop reasonable long-term forecasts that reflect not only the quantity of electricity required, but also the hour-by-hour demand. The companies' load forecast models consider such factors as weather conditions, daily usage patterns, future economic activity, population, and potential adoption rates of demand-side management programs, electric vehicles, private solar generation, energy efficiency measures and more.

Seasonal and daily variability of customers' energy needs drive the development of a generation portfolio that can reliably meet customers' needs in every hour of the year and under a broad range of weather conditions. For example, over the course of the year, approximately 50% of customers' energy needs occur at night when solar power is not generating electricity, with up to 65% occurring at night during the winter months.

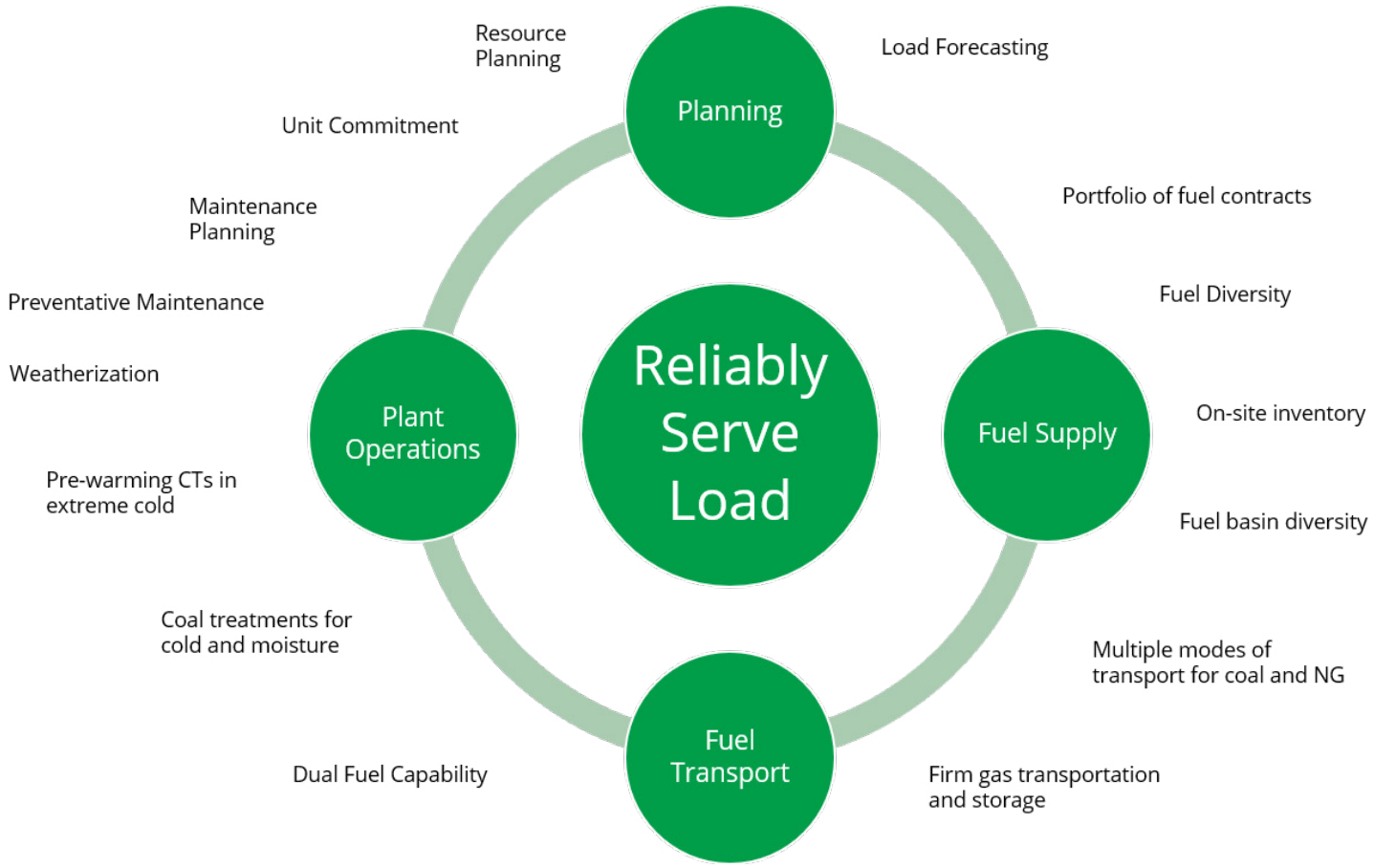
Currently, fossil-fueled generation is the lowest reasonable cost technology for meeting nighttime energy demand. However, as energy storage technology and economics improve, the combination of storage and renewable generation may serve peak demand, manage hour-by-hour changes in customer demand and supplant fossil fuel.

Considering all the above factors, LG&E and KU submit an Integrated Resource Plan to the Kentucky Public Service Commission (KPSC) once every three years, as required. However, the companies annually review and update their plan to reflect the latest information and forecasts and must affirm the adequacy of their resources annually in filings with the KPSC.

As a result of LG&E and KU's attention to planning and maintenance, the companies have demonstrated sustained excellence in generation reliability in recent years, reflecting top-quartile performance in its equivalent forced outage rates that are well below industry averages as tracked by ReliabilityFirst Corporation.

Seasonal and daily variability of customers' energy needs drive the development of a generation portfolio that can reliably meet customers' needs in every hour of the year and under a broad range of weather conditions. Figure 3 illustrates the holistic approach that LG&E and KU take to ensure reliability, which involves both short-term and long-term plans and actions.

***Figure 3*: Ensuring Reliable Generation Operations**



Building a Stronger, More Resilient Energy Grid

As we strive to address climate change with the goal of advancing a cleaner energy future, PPL remains focused on strengthening the energy grid and making it more resilient to future storms and severe weather that may become more frequent with climate change.

Across our existing U.S. operating companies, we have invested more than $20 billion over the past decade on infrastructure improvements, much of that focused on incorporating new technology and hardening our T&D systems. Across our utilities, these improvements have reduced the number of outages our customers experience by an average of 35% over the past decade despite recent increases in storm activity and severity, including hazardous wind levels across our operating companies increasing by 30% to 50%.

Our efforts to strengthen the power grid are focused on:

- Replacing aging equipment, often to higher design standards.
- Installing smart grid technology and automation to enable real-time monitoring of system conditions, detect faults and quickly restore power to as many customers as possible when outages occur. The installation of more than 9,200 smart grid devices has prevented more than 1.4 million outages since 2015.
- Building new power lines and substations to support increased demand, add redundancy and give us greater flexibility to reroute power.
- Rebuilding existing power lines with stronger poles and wires to better withstand extreme wind and tree impacts.
- Clearing trees and other vegetation that pose a threat to power lines.
- Installing devices to prevent lightning and animals from damaging equipment.
- Enhancing cyber and physical security to protect critical T&D assets.
- Assessing flood risks at critical facilities, such as substations and power plants, and relocating facilities or installing defenses, where necessary.

35%

Average reduction in outages even in the face of increasing storm activity and severity.

Similarly, our efforts to modernize and upgrade our natural gas operations are focused on:

- Replacing gas lines with more durable materials. LG&E, for example, completed its gas main replacement program in 2017, replacing more than 540 miles of cast iron, wrought iron and bare steel pipes with primarily longer-lasting plastic piping that is less vulnerable to degradation. The project also included adding more valves to aid in response should damage occur. Currently, the company continues to replace aging steel service lines to customers' homes.
- Upgrading city gate, regulator and compressor stations with new valves, piping and modern regulating, measurement and protective equipment.
- Following comprehensive safety protocols that include using advanced in-line inspection tools to assess the condition of pipelines and conducting walking patrol and aerial leak detection surveys to find and repair leaks.

Completing the gas main replacement program significantly improved safety and reliability by mitigating risks related to flooding and extreme cold. The upgrades help eliminate water intrusion that can cause service interruptions. Our overall improvements have, to date, led to a decrease of below-ground gas leaks on our system by more than 70% since 2010.

As we work to upgrade both our electric and natural gas T&D systems, we continuously evaluate the impacts of severe weather events and use the insights gained to make our systems even stronger and more resilient.

For example, LG&E and KU use lessons learned from Hurricane Ike in 2008 and a severe ice storm in 2009 to enhance their hazard tree mitigation and pole inspection and treatment programs. PPL Electric, LG&E and KU use insights gained during severe ice storms and cold-weather events to add back-up generators to major gas facilities and winterize gas processing equipment and compressor stations so that they can operate in sub-zero temperatures. And PPL Electric responded to flood events at various substations from 2010 to 2015 by evaluating all substations on their system and modifying or relocating those within flood-prone areas.

In addition, PPL examined our potential vulnerability to extreme weather conditions such as those experienced in Texas during Winter Strom Yuri in 2021, which disabled the energy grid. Given the aforementioned practices and improvements, our access to regional transmission and our management of generation resources in Kentucky, we believe such extreme, widespread impacts to our energy grid are highly unlikely.

Ensuring Business Continuity in Emergencies

While PPL maintains a focus on system hardening and grid resilience to mitigate damage from severe weather events and other risks, we also recognize the importance of preparing for potential crises.

With crisis preparation in mind, PPL maintains a Corporate Emergency Management Plan, as well as operating company and hazard-specific plans for responding to a wide range of potential scenarios.

These plans are focused on ensuring business continuity and protecting the public, employees, the environment and our facilities and align with the National Incident Management System used by government agencies across the U.S. in responding to local disasters and emergencies. We conduct periodic tabletop and other exercises to ensure our ability to respond effectively and keep critical operations functioning when crises arise. Regarding severe weather events, PPL's operating companies actively monitor forecast conditions and model the potential impacts of storms before they arrive to anticipate resource needs and prepare in advance for possible outages.

These plans and processes were tested in 2020 during the COVID-19 pandemic. PPL has maintained a pandemic plan for more than 10 years and used this as the foundation for its response to COVID-19.

The company began monitoring and discussing COVID-19 activities in late January and early February 2020, activating a Pandemic Response Team, local emergency and business continuity plans, and the corporate Executive Crisis Team strategy.

PPL's strategy focused on balancing the safety of our employees with the critical needs of our customers. Efforts included:

- Isolating essential workers.
- Enhancing availability of technology equipment and systems to support a remote work environment for support roles.
- Implementing new protocols such as smaller work groups and remote reporting to minimize contact and increase social distancing for essential workers.
- Utilizing several resources to support effective communications to our workforce, including websites dedicated to COVID-19 work-related information and mass notification systems for consistent messaging.

Mitigating Financial Risk Through Regulatory and Liability Protections

Regulatory mechanisms enable PPL Electric, LG&E and KU to request from their respective public utility commissions, the authority to treat expenses related to specific extraordinary storms as regulatory assets and defer such costs for regulatory accounting and reporting purposes.

Once such authority is granted, LG&E and KU can request recovery of those expenses in a base rate case and begin amortizing the costs when recovery starts. PPL Electric can recover qualifying expenses caused by major storm events, as defined in its retail tariff, over three years through a Storm Damage Expense Rider.

In addition, PPL Electric uses a Federal Energy Regulatory Commission (FERC) formula rate, which is filed annually, to provide timely recovery of capital and operation and maintenance expense associated with the company's transmission system. This includes costs related to storm events. LG&E and KU also use an annual FERC formula rate that applies to non-affiliated transmission customers.

And, for generation, LG&E and KU have a regulatory asset recovery rider for recovery of future coal plant retirements, as well as an environmental cost recovery rider.

PPL's operating companies also maintain insurance coverages to help mitigate the financial impact of severe weather events. For instance, we maintain coverage to protect from potential property damage losses due to the extreme weather impact on our physical assets such as generation units, substations and buildings. Covered perils include but are not limited to flood, earthquake, named windstorm and hail damages to operating company assets. The PPL Electric property insurance program does not cover storm damages to utility poles and wires. These are covered through public utility commission rate cases and the Storm Damage Expense Rider outlined above.

STRATEGY

Assessing Our Portfolio

In 2017, PPL conducted a detailed assessment of how future requirements and technological advances aimed at limiting global warming to 2°C above pre-industrial levels could impact PPL. Since that time, the Intergovernmental Panel on Climate Change (IPCC), the United Nations body for assessing the science related to climate change, has issued two reports of particular relevance to our analysis, one in 2018 and another in 2021. These reports show that impacts from global warming are already being observed and that, in the aggregate, climate-related risks are larger if global warming exceeds 1.5°C above pre-industrial levels before returning to 1.5°C above pre-industrial levels. The risks depend on several factors, including the magnitude and rate of warming, peak and duration of warming, geographic location and adaptation actions. Significantly greater and more expansive global adaptation actions are required in scenarios that include a significant temperature overshoot.

Generation Scenario Analysis

PPL acknowledges the IPCC's view of climate trends and associated physical impacts of climate change. As our emissions from generation resources that we own represent the largest component of PPL's carbon emissions footprint and corporate-wide CO_2e reduction goal, we focused our climate assessment on three distinct future generation-related transition scenarios that consider PPL's owned generation emissions and future resource mix:

- A Current Policies Scenario establishing PPL's future carbon emissions trajectory and potential range of reductions assuming no new regulatory requirements.
- A 1.5°C Scenario benchmarking the range of reductions against an IPCC global climate mitigation pathway.
- A Fast Transition Future Policy Scenario benchmarking the range of reductions and forecasted resource mix against the expected contribution pathway for the power sector under the U.S. Nationally Determined Contributions (NDC) to the Paris Agreement.

These scenarios are designed to describe possible future states and potential implications for PPL within those future states. While grounded in plausible assumptions, PPL's scenarios and forecasts are not specific predictors of the future and do not constitute future business plans. The results of our climate scenario analysis and assessment are shown in the section of this report titled, "Results and Implications for Our Business."

Current Policies Scenario

As we did in 2017, PPL modeled our Kentucky power generation resources under a "Current Policies Scenario" where changes in resource mix are shaped by key technology and economic drivers, rather than changes in policy or regulation. This approach sets forth a future range of emissions reductions from owned generation and establishes a baseline for comparison of alternate approaches.

In this scenario, future coal plant retirements take place when they reach the end of their economic lives. New generation is a mix of non-CO_2 emitting technologies, renewables, battery storage, and natural gas (to support grid reliability) based on the relative assumed economics of these and new technologies, future fuel prices, and reliability requirements to meet customers' energy needs throughout the year. Future emissions are a function of load projections and the emissions profile of the generation mix used to serve that load. The reference case contained in LG&E and KU's IRP filed with the Kentucky Public Service Commission in October 2021 is included in this scenario forecast.

1.5°C Scenario – Global emissions pathways

PPL consulted the IPCC's global analysis, because we believe the IPCC's work is among the most respected and robust analyses of the temperature impacts of various mitigation pathways. In using this analysis, we recognize the challenges associated with translating global emissions pathways to our sector and our operations in the United States, as further explained below.

The IPCC began publishing its global climate assessment reports in 1990 and is currently in the sixth assessment cycle of reporting.[6]

The 2021 IPCC climate change report builds on the IPCC's 2018 special report referenced in the footnote below. The 2021 report provides an update on the current state of the climate (including how it is changing and the role of human influence), the state of knowledge about possible climate futures, climate information relevant to regions and sectors, and limiting human-induced climate change. The report posits that climate risks can be reduced by the expansion and acceleration of far-reaching, multi-level and cross-sector climate mitigation, and by both incremental and transformational adaptation. This report reaffirms, with greater certainty, the conclusions of earlier IPCC reports.

The 2021 report's summary for policymakers includes the following observations of climate trends:

- The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years.
- Human-induced climate change is already affecting many weather and climate extremes in every region across the globe. Evidence of observed changes in extremes such as heatwaves, heavy precipitation, droughts, and tropical cyclones, and their attribution to human influence, has strengthened since the Fifth Assessment Report completed in 2014.
- Future greenhouse gas emissions will cause future additional warming, with total warming dominated by CO_2 emissions.

For our "1.5°C Scenario" analysis, PPL selected the 2018 IPCC special report mitigation pathways as they are consistent with the 2010-2050 timeframe of PPL's enterprise-wide CO_2e goal (the IPCC pathways achieve global net-zero CO_2 emissions around 2050) and enable us to compare emissions reductions over this period. The energy-related and carbon removal assumptions are also clearly and concisely described for each pathway in the 2018 report.

The 2018 special report put forth four illustrative model pathways (P1, P2, P3 and P4) showing different mitigation strategies that could achieve the net emissions reductions required to limit global warming to 1.5°C with no or limited temperature overshoot. PPL chose the IPCC's P3 mitigation pathway to benchmark future emissions range and trajectory as it is characterized as a "middle-of-the-road" scenario in which societal and technological development follows historical patterns, and emissions reductions are primarily achieved by changing the way in which energy and products are produced.

The P3 pathway, like all IPCC mitigation pathways, assumes levels of carbon capture and sequestration that depend upon future advancements in carbon capture technology, as well as availability of biological and terrestrial sequestration on a large scale. Significant research in these areas is currently underway across the globe, including soil carbon sequestration, transformation of carbon emissions into algae biofuels and building materials, and carbon capture and storage in deep geological formations. However, we recognize that the assumed levels of carbon capture and sequestration may turn out to be unachievable within the assumed timeframes.

[6] *In 2018 the IPCC issued a special report on global warming of 1.5°C titled "Global Warming of 1.5°C: an IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development and efforts to eradicate poverty (SR1.5)." On August 9, 2021, the IPCC published Working Group I's contribution to the sixth assessment titled "Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change." By the spring of 2022, the IPCC expects to complete the sixth assessment cycle report by publishing reports from Working Group II (impacts, adaptation and vulnerability) and Working Group III (mitigation).*

We also recognize that the P3 Pathway assumes continued emissions from the power sector well beyond the 2035 date for decarbonization of the power sector that is currently contemplated in proposed U.S. federal legislation. See the Fast Transition Future Policy Scenario below.

The IPCC's P3 Pathway

Our evaluation of the P3 pathway focused on the following key assumptions[7] that are relevant to our power generation and have implications for electric transmission and distribution, and gas distribution assets (all comparisons are from a 2010 baseline):

- CO_2 emissions are reduced by 41% by 2030 and 91% by 2050.
- Energy demand increases by 17% by 2030 and 21% by 2050.
- Renewable share of electricity increases to 48% by 2030 and 63% by 2050.
- Primary energy from coal is reduced by 75% in 2030 and 73% in 2050 (possibly suggesting some new build or expanded operation post-2030).
- Primary energy from gas goes up 33% by 2030 and comes down to 21% by 2050.

The global generation trends above are directionally consistent with the U.S. Energy Information Administration (EIA) reference case projections for the U.S. electricity sector[8] (Figure 4), particularly with respect to renewables. The EIA projects that renewables will become the predominant source of energy generation, surpassing natural gas in 2030, although as a smaller percentage of total generation than anticipated in the IPCC global assumptions. The EIA projects that the renewable share of generation will double from 21% in 2020 to 42% in 2050 while coal declines from 19% in 2020 to 11% in 2050. Generation from natural gas is projected to decrease slightly from 40% in 2020 to 36% in 2050.

However, one key difference between the IPCC 2018 mitigation pathways and the EIA projections is the assumed share of nuclear energy. The P3 pathway assumes that globally there will be more than a 500% increase in the share of nuclear generation by 2050, the greatest increase among the pathways, versus the EIA's view that nuclear energy will decline by 8% in the U.S. between 2020 and 2050. In this regard, we believe that the IPCC's global view cannot be directly applied in the U.S. where expansion of nuclear on this scale is highly unlikely; however, we have not assessed the extent to which these assumptions impact the trajectory of the P3 mitigation pathway.

We find the IPCC global pathways to be generally useful in evaluating possible business impacts in a range of future possibilities, particularly as policymakers, investors and other stakeholders are keenly focused on them. However, there are limitations to and uncertainty in this type of analysis. In selecting the IPCC's 2018 mitigation pathways for analysis, we understand that adherence to these pathways will be challenging considering the substantial cross-sector and multi-national coordination necessary to achieve the rapid decarbonization of energy supply and significant advances in low-carbon technologies. We also recognize that these scenarios are based on global emissions from all sectors, limiting the level to which the scenarios can provide insights with respect to PPL's operations. In fact, research by the Electric Power Research Institute (EPRI) has shown that there are challenges in translating global emissions pathways to the actions of a nation, region or sector and even more to the actions of an individual utility company. In its April 2020 report[9], EPRI notes, "At the highest level, there is uncertainty in the relationship between a global temperature goal and global greenhouse gas emissions. From there, the uncertainty only increases as we move from global to country to local emissions with additional factors entering the story at each level." For example, a company may increase its generation and emissions, but displace higher emitting generating units within a power market. As a result, assuming emissions reduction targets across all sectors or even for all electric utilities, for example, may not be appropriate in all cases.

[7] *See IPCC Figure-2.16 and IPCC Figure SPM.3B.*

[8] *U.S. Energy Information Agency Annual Energy Outlook 2021.*

[9] *Review of 1.5˚C and Other Newer Global Emissions Scenarios Insights for Company and Financial Climate Low-Carbon Transition Risk Assessment and Greenhouse Gas Goal Setting.*

When selecting the IPCC P3 Pathway, PPL also considered the International Energy Administration (IEA) Net Zero by 2050 Scenario.[10] The report calls for a total "extremely ambitious" transformation of the energy systems that underpin the world's economies and sets forth a roadmap with more than 400 milestones showing how this transformation should happen, including an immediate end to new investment in fossil-fuel extraction and driving to net-zero electricity by 2040, with richer nations reaching net-zero emissions in 2035. The IEA also assumes the phase-out of CO_2 unabated coal power globally by 2030 and CO_2 unabated gas by 2040.

These global assumptions are more aggressive than those of the IPCC and the EIA reference case projections for the U.S., and we believe that the IPCC P3 pathway offers a measured view of global energy trends. However, we recognize that expected power sector contributions for richer nations under the IPCC mitigation pathways may be steeper than total global reductions. We consider such steeper power sector reductions in the policy scenario described below.

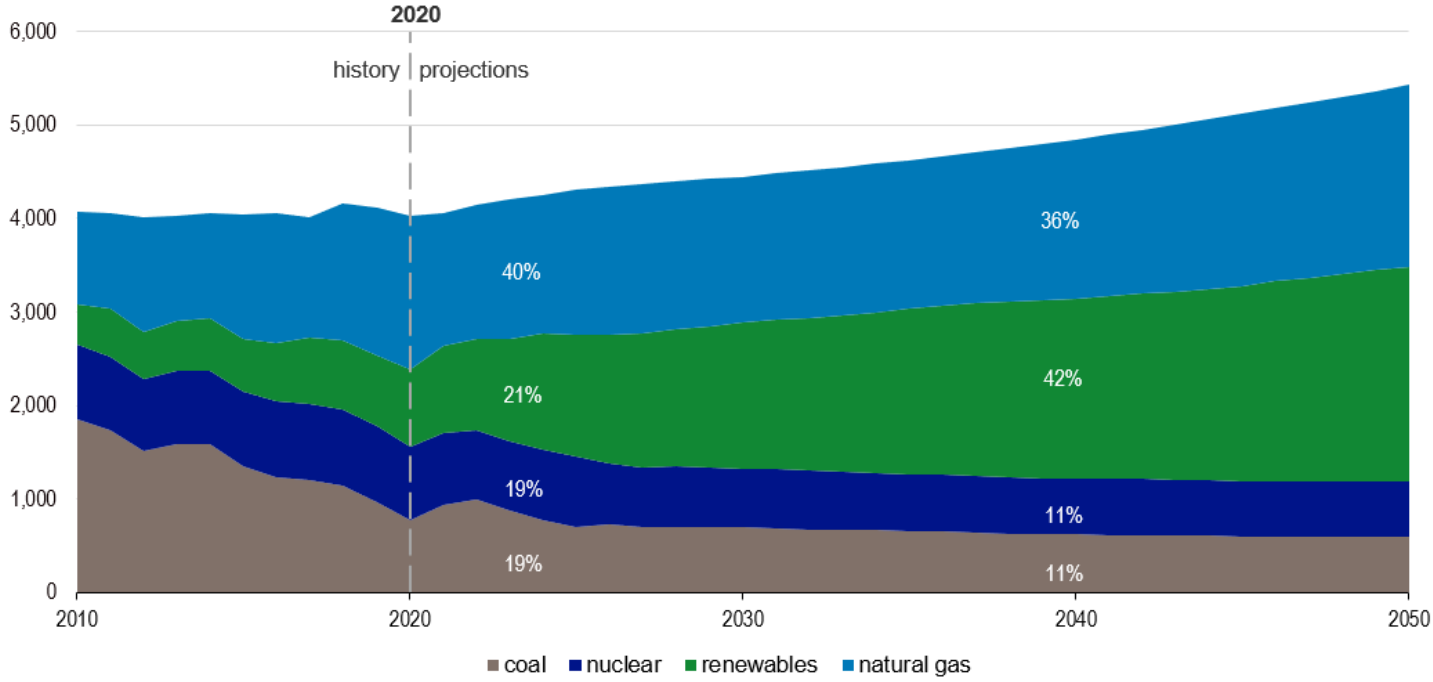
Fast Transition Future Policy Scenario

In looking at future policies that would drive a rapid transition to clean energy sources, PPL has focused on possible regulation at the federal level because our fossil generation assets (which are the ones at risk from climate change regulation) are all located in Kentucky, a state that is not currently contemplating CO_2 emission reduction requirements on power generation. The "Fast Transition Future Policy Scenario" considers the assumed power sector contributions under the U.S. Nationally Determined Contribution (NDC).

In the U.S. NDC submission under the Paris Agreement, the Biden Administration sets an economy-wide target to reduce net greenhouse gas emissions 50-52% below 2005 levels in 2030 with the expectation of achieving economy-wide, net-zero emissions no later than 2050. To achieve these levels of reduction, the Biden Administration envisions deep decarbonization in energy and other sectors and is promoting policies to achieve that objective.

At the time of this assessment, there were several clean energy policies being considered at the federal level. Given legislative and regulatory uncertainty, we did not pick a specific legislative proposal. We are assuming a future federal policy that requires 100% clean electricity by 2035, which is the expected contribution pathway from the power sector under the U.S. NDC, and an interim requirement of 80% clean electricity by 2030. The interim clean energy requirement is assumed to be the level that the power sector needs to reach in 2030 to support the economy-wide target of 50-52% reduction from 2005 levels and represents approximately an 85% reduction[11] in power sector emissions from a 2005 baseline.

***Figure 4*: U.S. Electricity Generation from Selected Fuels (2010-2050)**



Source: U.S. Energy Information Administration, Annual Energy Outlook 2021 (AEO2021)

[10] *Net Zero by 2050: A Roadmap for the Global Energy Sector. International Energy Administration (IEA), May 2021.*

[11] *2030 U.S. NDC: Policy Progress in all Corners of the Economy. Starla Yeh, March 30, 2021, https://www.nrdc.org/experts/starla-yeh/2030-us-ndc-policy-progress-all-corners-economy-0*

PPL recognizes that future policies could also impose a compliance obligation on regulated transmission and distribution utilities in restructured markets. As we would expect that obligations generally could be met by these utilities purchasing additional clean energy subject to state regulatory approvals, we believe the focus of our scenario analysis is appropriately focused on our owned generation in Kentucky.

Key Assumptions for Current Policies Scenario

As noted earlier, PPL's scenario analysis sets forth a future range of emissions reductions from owned generation under a Current Policies Scenario. In modeling the Current Polices Scenario to 2050, PPL relies on the following base assumptions:

- Current Kentucky fossil generation facilities are retired at the end of their economic lives.
- Future resource decisions are based on the relative economics of technologies available at the time decisions are made, rather than future policies that favor specific technologies.
- There is no CO_2 price or additional cost associated with emission reductions as reductions are driven by technology advancements and relative economics.
- 725 MW of new solar is added by 2028 (225 MW by 2025 and an additional 500 MW by 2028).
- Retrofitting coal generation facilities with CCS remains uneconomic.

Load

PPL developed high and low load forecasts for Kentucky to support scenario modeling (Figure 5). The base load forecast is flat to declining as energy efficiency gains are assumed to offset increased consumption from new customers. In the high load forecast, new industrial customers are assumed to locate in PPL's service territories and favorable economic conditions result in higher customer growth (0.6% CAGR versus 0.4% CAGR in base case). In addition, the high load forecast reflects accelerated growth in electric space heating and electric vehicles (Figure 6).[12] As a result, the portion of energy consumed at night and in the winter months is significantly higher in the high case.

In the low load forecast, existing industrial customers are assumed to leave the service territory and unfavorable economic conditions result in lower customer growth (0.2% CAGR versus 0.4% CAGR in base case). In addition, the low case reflects an even faster pace of energy efficiency improvements than in the base case and significantly higher penetrations of distributed solar (Figure 7).[13] In both the high and low cases, LG&E and KU become winter peaking under normal weather conditions.

Economics and Technology

PPL's scenario analysis considers varying assumptions regarding the relative economics of available technologies moving forward, which are being driven primarily by the pace of technology development and commodity prices. PPL considered different variables in these areas given the inherent uncertainty in predicting future conditions.

***Figure 5*: Energy Requirements**

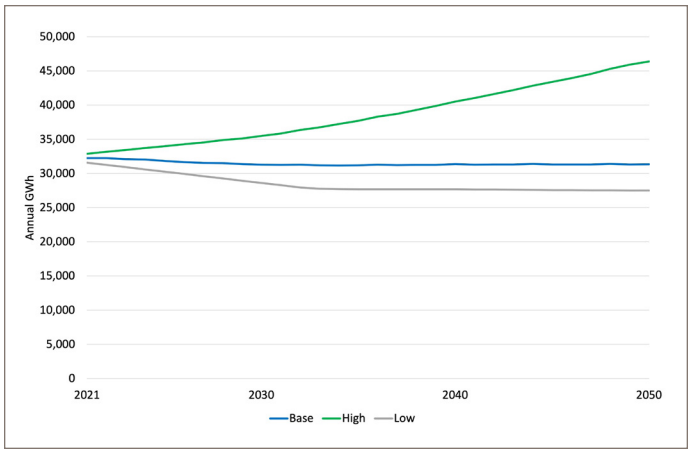


***Figure 6*: Number of Electric Vehicles**

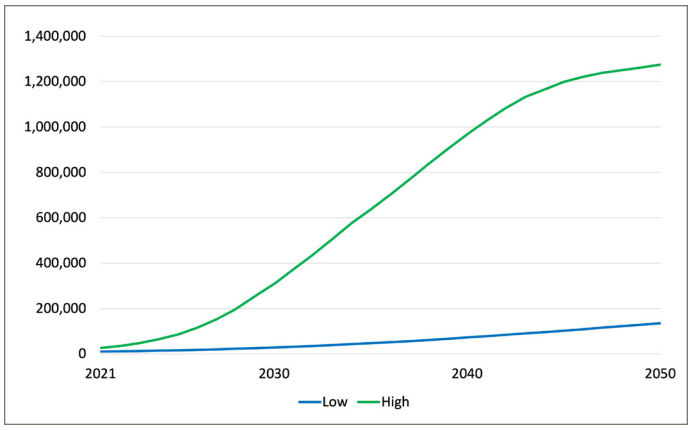
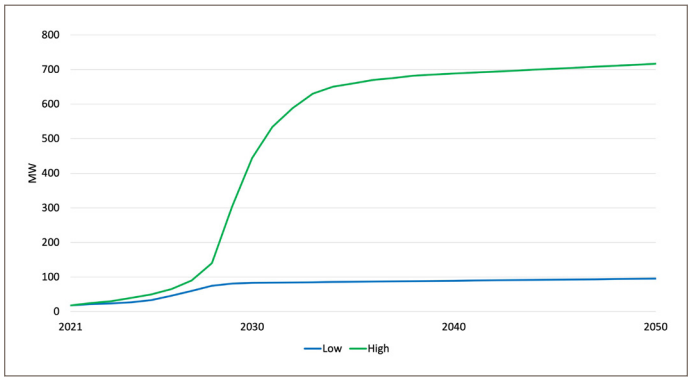


***Figure 7*: Distributed Solar Installed Capacity**



[12] *By 2030, electric vehicles are assumed to account for 50% of new vehicle sales.*

[13] *End-use appliance efficiencies are assumed to reach 2050 forecasted levels by 2030. In addition, the existing cap on net metering is assumed to be removed.*

The high end of PPL's Current Policy Scenario emissions range reflects substantial growth in energy usage through 2050, slower development of zero-emissions technology, low natural gas prices, and solar and battery storage costs that decline less than forecasted under the moderate technology innovation scenario projections in the National Renewable Energy Laboratory's 2021 Annual Technology Baseline. In addition, the relative economics of available technologies are assumed to result in fewer zero-emitting resources through 2040. By 2050, relative economics favor zero-emissions resources.

The low end of the emissions range reflects declining energy usage through 2050, less energy consumed at night, faster development of zero-emissions technology, high natural gas prices, and solar and battery storage costs that decline faster than forecasted by the National Renewable Energy Laboratory. The relative economics of available technologies are assumed to favor zero-emitting resources by 2040, and at the outer boundary of this range, economics would result in the retirement of all fossil plants by 2050.

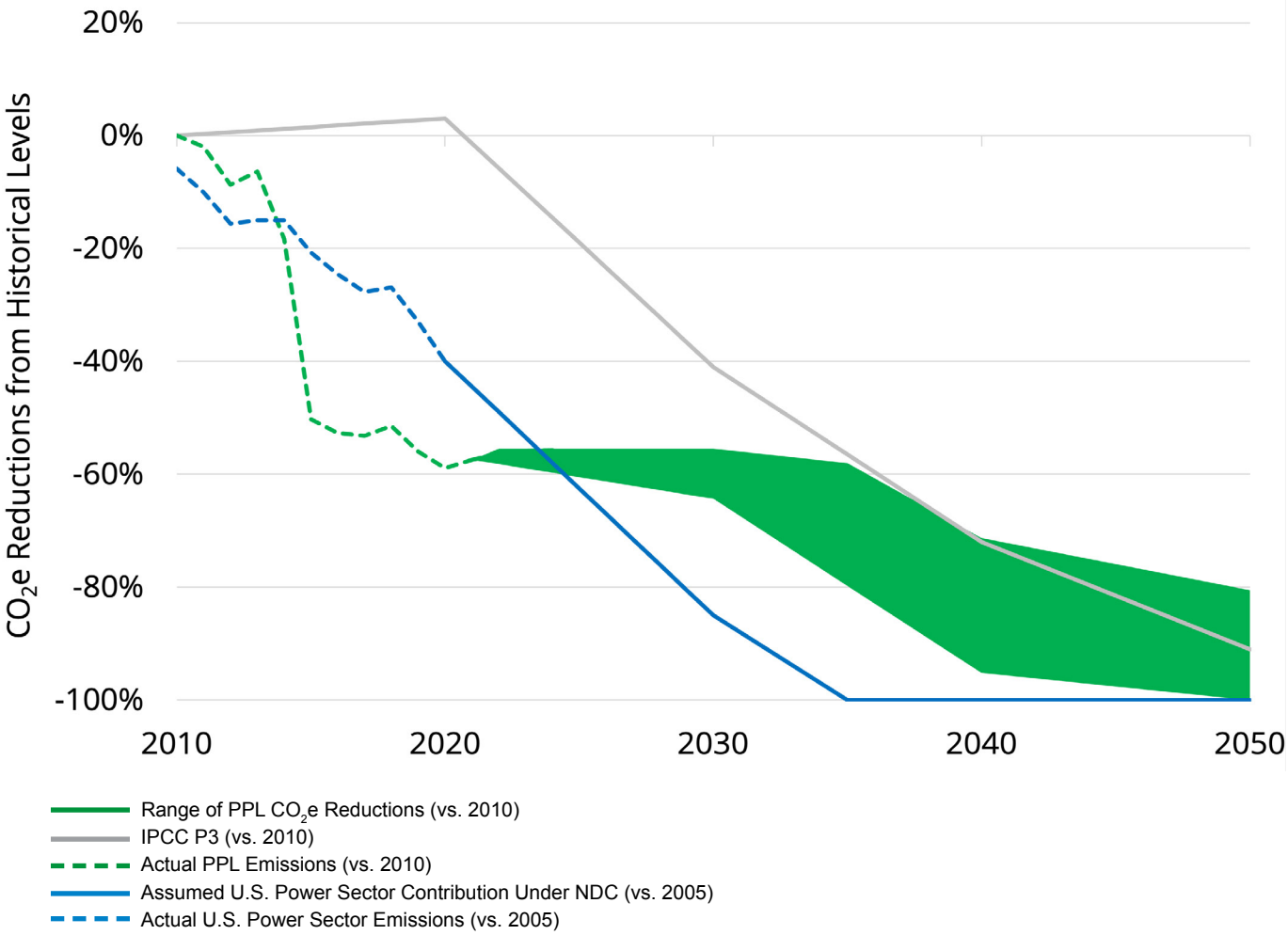
This range was used as a comparison to assumed reductions under a 1.5°C Scenario (IPCC P3 pathway) and Fast Transition Future Policy Scenario (Figure 8).

Results and Implications for Our Business

The significant increases in renewable and non-emitting energy resources assumed in the 1.5°C and the Fast Transition Future Policy scenarios would undoubtedly drive the continued transformation of the power grid beyond generation, and we expect this to present more opportunities than risks for us as we invest in enabling a more flexible grid that can support two-way flows of electricity, creating more efficiencies, and connecting more distributed energy resources like micro-grids, solar, electric vehicles and battery storage to the grid. On the generation front, we believe that there are significant opportunities for innovation and investment as the power sector will play a critical role in decarbonizing the overall economy.

PPL's historical and projected emissions (on an absolute reduction basis) are generally in line with the overall emissions reductions assumed in the IPCC P3 pathway.[14] At the low end of the range, non-emitting resources grow significantly in the 2030s, and PPL's emissions reach zero to net-zero emissions in 2050 depending upon resource mix (i.e., 100% renewables and storage vs. a mix of renewables and other non-emitting resources).

***Figure 8*: Comparison of Scenarios**



[14] *Absolute emissions percentage reductions are from PPL's 2010 net-zero goal baseline. Absolute emissions reductions from a 2010 baseline of Kentucky-only emissions are projected to be consistent with the mid-to-low end of the Current Policies range of reductions and do not change our view of results or potential business implications.*

At the high end of PPL's projected emissions range, assuming high load, low gas prices, lagging clean energy technology developments and no intervening carbon policy, emissions would overshoot the 2050 net-zero emissions goal. This is a very conservative view, and we believe that there is a low probability of actual emissions results to be in this high range. Reaching net-zero emissions in 2050 assumes that renewables and other non-emitting resources supported by clean energy technologies are widely and economically available. Considering our 2021 IRP base case assumptions through the 2036 planning period and continuing reductions with a straight-line trajectory from that point, we would forecast emission reductions to fall within the mid to lower end of the range with emissions reaching nearly 90% below 2010 levels by 2050, supporting our view that clean energy technology will be necessary to achieve net-zero without the use of carbon offsets.

However, change on the scale and at the pace necessary to meet the U.S.'s economy wide NDC would entail modifying the company's generation resource mix shown in Figure 9 beyond what we assume economics and technology would deliver to support emission reduction levels shown in Figure 10. PPL's 2035 interim goal targets a 70% reduction from 2010 levels, and the low end of the projected range (assuming favorable economics and technology development) shows reductions reaching 80% in 2035. These projected reductions fall short of the 100% reduction expectation for the power sector under the U.S. NDC. In 2030, PPL's projected emissions at the low end of the range reach nearly 65% vs. an assumed 85% reduction. The scope of effort to reach the emissions levels contemplated under the U.S. NDC is discussed in more detail below.

When contemplating the various scenarios and in particular the Fast Transition Future Policy Scenario, it is important to understand that, given the significant uncertainty surrounding technological and regulatory developments, it is difficult

***Figure 9*: Energy Mix**

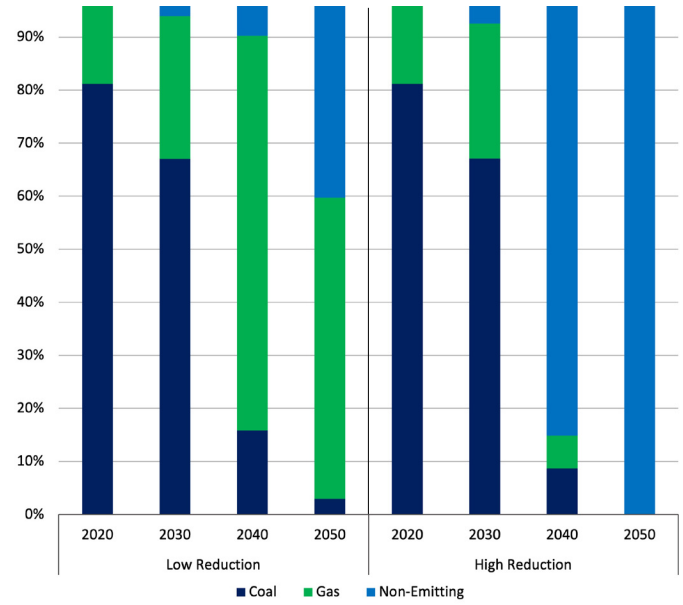
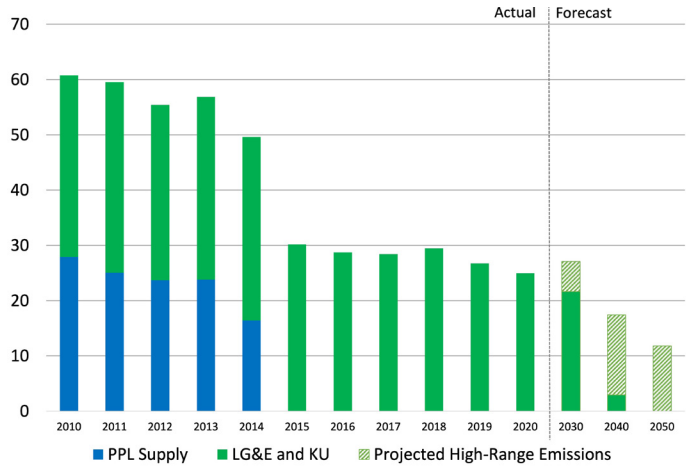


***Figure 10*: CO_2e Emissions (Metric Tons)**



to predict how we will be impacted and adapt to these developments. We would expect to work with state and federal regulators on any compliance plans stemming from any future regulatory requirements and believe that compliance costs would be subject to rate recovery.

Technology, Interdependencies and Pace of Change

To reach the emissions levels contemplated under the U.S. NDC and corresponding sectoral pathways, EPRI estimates that the U.S. would need to achieve annual energy-related emissions reductions that are three times higher than the level achieved from 2005 – 2020, going from 1 gigaton every 15 years to 1 gigaton every 5 years. The rate of each sectors' emissions reduction would need to accelerate to reach a "3X" increase in economywide reductions. The building, transportation and industry sectors would need to significantly accelerate their level of reductions, and the power sector would need to play a crucial role in helping them do so through electrification, energy efficiency and clean energy.[15] Accordingly, EPRI finds that achieving net-zero emissions by 2050 would require time and significant technology advancements.

The IEA report referenced above is also instructive in understanding the scope and breadth of action necessary to decarbonize the energy sector and the interdependencies of actions and technology necessary to achieve a net-zero emissions economy. The report identifies seven "key pillars of decarbonization" with milestones that span different sectors: energy efficiency; behavioral changes; electrification; renewables; hydrogen and hydrogen-based fuels; bioenergy; and carbon capture and storage (CCS). The agency says that all technologies needed on the path to 2030 already exist. But by 2050, nearly half the emissions cuts are expected to come from technologies that are still largely in the demonstration or prototype phase, such as advanced batteries and direct air CCS, and will require prioritization of and substantial increases in government R&D spending before 2030 to support clean energy innovation and leverage private investment. The National Academies of Sciences, Engineering and Medicine have called for the U.S. to triple federal investment in clean energy R&D and technology demonstration in order to meet a 2050 net-zero goal.[16]

[15] *Examining the Pace of U.S. Carbon Reduction Goals Based on 2030 Goals*

[16] *The National Academies of Sciences, Engineering and Medicine. Accelerating Decarbonization of the U.S. Energy System (2021)*

PPL's Clean Energy Transition Strategy and Path to Net-Zero Carbon Emissions

PPL is developing a strategic framework with the goal of positioning the company to help advance a clean energy future within our service territories and across the broader United States. Our transition strategy is fundamentally centered around four key areas that we believe will enable us to advance new opportunities for the company and help deliver a net-zero economy by 2050:

- Decarbonize our generation.
- Decarbonize our non-generation operations.
- Advance research and development.
- Enable third-party decarbonization.

We view our path to net-zero emissions on a continuum, with a primary focus on eliminating our gross emissions, leveraging technology to remove emissions where they cannot be eliminated due to cost or reliability constraints, and finally, considering carbon offsets for any remaining emissions as the least-preferred option.

Our commitment to achieve net-zero carbon emissions by 2050 is backed by the actions that we are and will continue to take to support a low-carbon energy system that is affordable and reliable and provides the time needed for technology to advance. One clear example is our rigorous capital expenditure program that is based on identified projects designed to deliver long-term value for our stakeholders and align with our corporate strategy. As a result of PPL's strategic repositioning, we continue to evaluate additional capital investment opportunities. In the meantime, we plan to invest at least $1 billion in proceeds from the sale of WPD in additional regulated T&D capital investments through 2025 to maintain and improve grid resiliency and reliability, and support grid modernization.

Commitment: Decarbonize our generation

Goals:

- **Economically retire coal-fired generation.**
- **Advance clean power generation and leverage future technologies.**
- **Maintain reliability and affordability for our Kentucky customers and support state economic development.**

Advancing a cleaner energy future and reducing the largest source of PPL's direct emissions involves investing in renewable and non-emitting generation. The only fossil-fueled power plants PPL owns are in Kentucky, where LG&E and KU have plans to economically retire aging power plants and replace them with non-emitting generation. Based on the current retirement schedule, we expect our coal capacity to be reduced from just over 4,700 megawatts in 2020 to approximately 550 megawatts in 2050 (Figure 11). We believe that actions needed to further transition our generation offer PPL significant long-term opportunities for investment in new, non-emitting generation and clean energy technologies to help deliver value for our customers and shareowners. We will continue to develop plans to ensure that we can execute that transition in a manner that provides reliable and affordable power for our customers.

LG&E and KU are increasing solar generation through customer programs without increasing costs to non-participating customers. This includes offering a Green Tariff that enables renewables to be layered in through PPAs and a community solar share program. The PPAs to date total 225 megawatts of solar, and five of the eight 500-kilowatt Solar Share sections are complete.

Our 2021 Kentucky IRP addresses issues associated with the clean energy transition, including future load changes and the addition of new clean generation technologies. The IRP includes the retirement of nearly 2,000 megawatts of coal by 2036 and the addition of solar supported by storage, as well as natural gas simple cycle peaking plants, mainly for winter reliability. We are not building new coal generation, and our IRP base plan does not include plans for new combined-cycle gas facilities. We will continue to work with our state regulators and stakeholders as we develop additional plans and proposals, subject to regulatory approvals, in connection with our resource planning. We will submit our next IRP in 2024 that will cover a 15-year planning horizon through 2039. We expect that IRP to include additional non-emitting generation investment as we retire additional plants and address future capacity needs.

Figure 11: PPL's Kentucky Baseload Generation Resources

Power Plant	Unit	COD	Owned Capacity MW	Currently Projected End of Economic Useful Life (1)
Coal				
Mill Creek	1	1972	300	2024
E.W. Brown	3	1971	412	2028
Mill Creek	2	1974	297	2028
Ghent	1	1974	475	2034
Ghent	2	1977	485	2034
Ghent	3	1981	481	2037
Ghent	4	1984	478	2037
Mill Creek	3	1978	391	2039
Mill Creek	4	1982	477	2039
Trimble County	1	1990	370	2045
Trimble County	2	2011	549	2066
Natural Gas				
Cane Run (CCGT)	7	2015	662	2055
Total Baseload			5377	

(1) Per most recent deprection study filed in Case Nos. 2020-00349 and 2020-00350

Kentucky is a state rooted in manufacturing and energy development, and electricity costs are a key consideration for current and future economic development, including green energy development.[17] Kentucky has attracted over $10 billion of planned investments in the state in 2021 and we believe that there is opportunity for additional economic development growth in the state and commensurate load growth. Over the long-term, we will need a diverse and reliable generation mix that contains renewables and other clean, flexible energy resources to ensure that we can meet the electricity needs of our customers. PPL is investing in clean energy technology R&D, and LG&E and KU are providing leadership in demonstrating several clean energy technologies at the E.W. Brown Generating Station discussed in more detail below.

In addition, our current strategy involves responsibly investing in our unregulated renewable generation portfolio through Safari Energy. PPL's Safari Energy, LLC, subsidiary, continues to support the development of renewable energy in dozens of states across the U.S. Safari Energy has developed or acquired more than 500 commercial-scale solar projects since 2008. Since expanding its business model beyond building and selling solar facilities, the company has acquired more than 120 megawatts of solar generation that are operational as of October 2021. PPL is currently investing about $100 million annually in this business. We plan to continue to assess our unregulated clean energy generation strategy, including investment opportunities that fit within PPL's disciplined investment approach and risk tolerance.

Commitment: Decarbonize Our Non-Generation Operations

In addition to decarbonizing our generation portfolio, PPL's carbon emissions goal and clean energy transition strategy include decarbonizing other areas of our business by reducing company energy use, increasing electrification of fleet vehicles and reducing emissions associated with transmission and distribution equipment and gas distribution. The goals identified below are part of our plans to meet our corporate net-zero emissions by 2050 goal and are linked to operational performance. We intend to have similar goals for our future Rhode Island operations.

Goal: Electrify owned fleet vehicles.

Recognizing that the transportation sector has become the largest source of CO_2 emission in the U.S., we are strengthening our commitment to fleet electrification and have set new goals for transitioning our fleet. PPL's plans include converting light-duty vehicles from carbon-based fuels using a combination of fully electric vehicles or plug-in hybrids. For heavy-duty vehicles, electric lift technology uses battery power to operate the boom, bucket and lifts used by lineworkers, reducing the need for engine idling. This reduces fuel consumption and maintenance costs and minimizes job site noise. Fuel consumption is reduced by as much as a gallon of diesel fuel per hour of eliminated idling.

Goal: Reduce overall energy use for owned buildings.

PPL will undertake facilities planning to reduce emissions associated with our electric and gas use, including increasing renewables consumption for our owned buildings. We have already begun to identify opportunities to serve our energy needs through clean energy options. In Pennsylvania, we completed our first solar project at a PPL Electric facility, a 40-kilowatt solar array, to help meet our energy needs. We expect to install systems at additional service centers in the future. In Kentucky, a fully regulated state, reductions in building electricity use will help to reduce scope 1 emissions from our owned generation.

Goal: Assess operational improvements and investments necessary to maintain fugitive emissions rates at or below industry average across PPL's utilities.

We have reduced fugitive emissions associated with transmission and distribution equipment by 62% since 2010. PPL's operating companies continue to work to reduce sulfur hexafluoride (SF_6) greenhouse gas emissions through maintenance and equipment replacement. For example, PPL Electric has been using data analytics since 2015 to predict the failure rates of circuit breakers so that they can be replaced or repaired before SF_6 is released. This has resulted in top-decile performance for leak reduction, according to U.S. Environmental Protection Agency benchmark data. PPL Electric is in the implementation stage of replacing SF_6 breakers with vacuum breakers on 69kV transformers. LG&E and KU are performing trials with vacuum breakers as an alternative to utilization of SF_6 breakers. Vacuum technology uses dry air as insulation material and has been highly reliable in tests.

62%

Reduction in fugitive emissions associated with transmission and distribution equipment since 2010.

LG&E has reduced scope 1 fugitive emissions from gas distribution operations by 37% since 2016. These emissions reductions have been realized through inspection programs and replacement of steel customer service lines and aging natural gas transmission lines. Through 2020, LG&E has replaced, removed or verified about 8,300 customer services lines and removed 3,300 inactive steel services. LG&E implemented a Transmission Modernization program to replace approximately 15.5 miles of transmission pipeline in Jefferson County. Through 2020, approximately eight miles had been installed with over three miles placed into service. It is anticipated the project will be largely complete by the end of 2021. LG&E's Lost and Unaccounted for Gas as reported on our Gas Distribution Annual Report filed with Pipeline and Hazardous Materials Safety Administration was 1.1% for the year ending June 30, 2020, an amount within the industry average.

[17] *Green energy takes hold in unlikely places with Ford project (September 28, 2021): https://apnews.com/article/business-technology-kentucky-electric-vehicles-tennessee-6b515f5e4dcf89607a6c671bc9d31a68*

Commitment: Further Research and Development

Achieving net-zero carbon emissions requires advances in clean energy technologies and systems that can be delivered safely, reliably and affordably for those we serve. As we support a clean energy transition, we also recognize that we need to invest in innovation to address changing customer preferences, drive efficiencies in our business and enable broad access to clean energy technologies. With this in mind, we continue to invest in clean energy research and development to enable us to meet our net-zero-by-2050 goal while driving value for our customers and shareowners.

Goal: Advance new technologies through research, development and innovation in partnership with industry and research institutions.

In early 2021, PPL expanded its efforts to advance clean energy technologies by joining Energy Impact Partners' (EIP) global investment platform, which brings together leading companies and entrepreneurs worldwide to foster innovation toward a sustainable energy future. PPL has committed to invest up to $50 million across EIP's investment platform aimed at accelerating the shift to a low-carbon future and driving commercial-scale solutions needed to deliver deep, economy-wide decarbonization. Collaboration with EIP is expected to provide PPL greater visibility into emerging technologies that can be leveraged to advance the clean energy transition.

PPL is deeply involved in industry efforts focused on advancing research in several key technology areas: advanced dispatchable renewables and power electronics; long-duration energy storage and advanced demand efficiency; zero-carbon fuels (e.g., hydrogen); advanced nuclear energy; and carbon capture, utilization and storage. We are also promoting supportive policies for technology deployment through EEI's Carbon-Free Technology Initiative (CFTI), a coalition of environmental and technology-focused non-governmental organizations focused on implementation of federal policies that can help ensure the commercial availability of affordable, carbon-free, 24/7 power technology by the early 2030s.

As an anchor member in the EPRI-Gas Technology Institute (GTI) five-year Low-Carbon Resources Initiative (LCRI), PPL is committed to helping accelerate research and development of low-carbon and zero-carbon technologies. PPL's CEO is helping to lead this effort as chair of the LCRI Board Working Group.

The LCRI is a collaborative focused on identifying, developing and demonstrating affordable pathways to economy-wide decarbonization. This initiative is pursuing fundamental advances in a variety of low-carbon electric generation technologies and low-carbon energy carriers, such as advanced nuclear, carbon capture, utilization and sequestration (CCUS), hydrogen, ammonia, synthetic fuels and biofuels. This also includes assessing low-carbon pathways for producing, transporting and storing these energy carriers, as well as opportunities to use them in power generation, transportation and other applications.

PPL's operating companies also continue to support a variety of separate research and development activities. LG&E and KU's energy storage demonstration site in partnership with EPRI, is the first and largest utility-scale energy storage system in Kentucky. The battery is co-located with LG&E and KU's 10 megawatt solar plant, allowing the utilities to explore how the systems can operate together, a critical tool for understanding how intermittent renewable generation best fits into the company's generation portfolio and how batteries can improve site performance and reliability. LG&E and KU are also partnering with the University of Kentucky Power and Energy Institute of Kentucky (PEIK) on the integration of intermittent renewable generation.

PPL Electric's Keystone Solar Future Project, a project in partnership with the U.S. Department of Energy, industry and academia, has led to development of a dynamic distribution platform that has been recognized as innovative and industry-leading by the Smart Electric Power Alliance (SEPA), which named PPL Electric Utilities as the 2019 SEPA Power Players Investor-Owned Utility of the Year. Other activities include research into energy storage for the electric transmission system, the integration of DERs and electrification.

PPL believes that an all-of-the above approach to clean energy technology is needed to help deliver a sustainable clean energy transition that supports energy reliability, resilience and economic growth.

LG&E and KU, in partnership with the University of Kentucky's Center for Applied Research (CAER), are evaluating the use of carbon capture technology. CAER began its CO_2 program in 2006 with seed funding from LG&E and KU and has since established itself as a global leader in developing CO_2 capture technology. Since 2006, LG&E and KU have directly invested more than $4 million in CAER's decarbonization research. In 2014, CAER constructed a pilot-scale carbon capture unit at LG&E and KU's E.W. Brown Generating Station, which is one of a few at power plants in the U.S. with an operating carbon capture system. Using the existing CO_2 capture system, CAER plans to chemically alter the plant's flue gas to replicate the characteristics of a natural gas combined cycle plant. If successful, the technology could be demonstrated at LG&E and KU's Cane Run Station NGCC plant, continuing leading research, development and demonstration of this technology. Research from the natural gas CCS project will also support a planned bench-scale direct air capture system capable of 90% CO_2 capture, resulting in negative emissions, and produce 99.9% purity hydrogen gas. LCRI and LG&E and KU are among the partners for this planned research.

PPL believes that an all-of-the above approach to clean energy technology is needed to help deliver a sustainable clean energy transition that supports energy reliability, resilience and economic growth. Accordingly, PPL will continue to invest in advancing a full range of technologies that will help to advance our clean energy transition strategy.

Commitment: Enable Third-Party Decarbonization

We recognize the value of the energy grid in supporting the clean energy transition and economywide decarbonization. We will need to advance a clean energy delivery strategy that drives innovation, efficiency and resiliency.

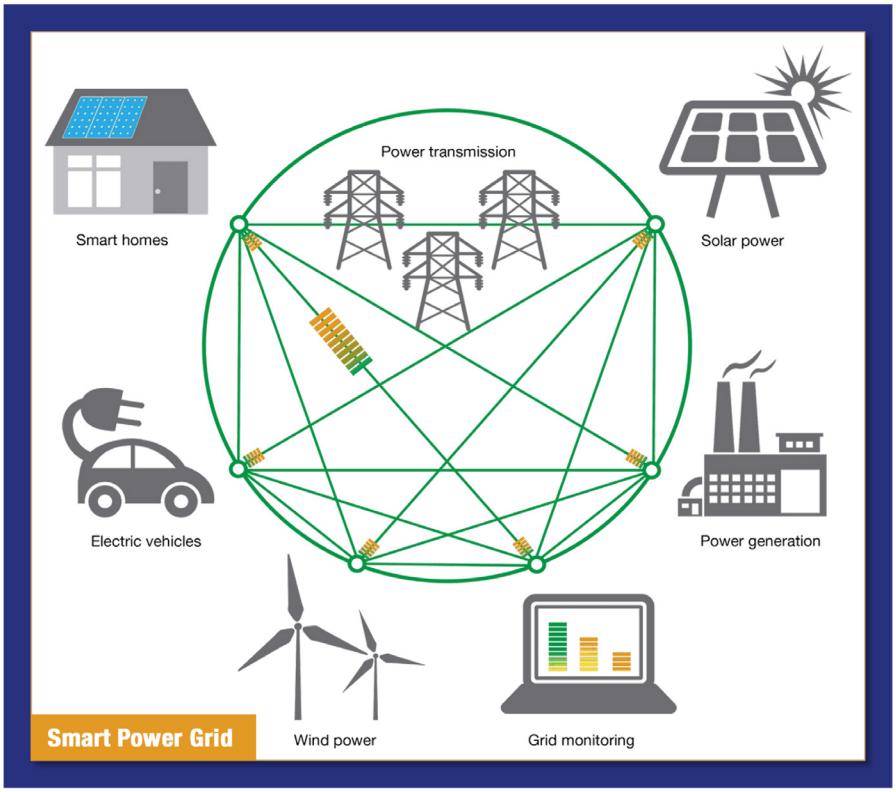
Goal: Position the grid as an enabler for clean energy resources and leverage leading performance across our utilities.

Our electric grid will need to support increased electrification of the economy and transportation, large-scale connection of DERs to distribution networks and the transmission of utility scale renewable energy to local communities and businesses. PPL has developed an advanced, resilient grid that's ready to assimilate renewable energy safely, reliably and cost-effectively by reducing the need for upgrades to accommodate new connections (Figure 12). We believe that additional investments in smart grid technology and the construction of new transmission to accommodate and deliver renewables present future investment opportunities for PPL and value for our customers. PPL will leverage our experience in Pennsylvania and the technology we have developed to deliver similar benefits to customers in Kentucky, where LG&E and KU recently received approval to deploy advance metering, and eventually in Rhode Island, where the state has adopted a goal to achieve net-zero economy wide carbon emissions by 2050.

As referenced earlier, PPL Electric has developed an automated electric distribution network designed to not only strengthen resiliency in the face of severe weather, but also pave the way to integrate increased DERs reliably and efficiently. PPL Electric's distributed energy resource management system (DERMS) enables real-time monitoring and management of renewable resources connected to the grid, including behind-the-meter resources. DERMS allows our operation system to mitigate any power quality issues as a result of renewable resources, in addition to increasing the ability of our grid to host more renewable resources without the need to make grid investments.

While much of the transmission infrastructure in the U.S. is aging, PPL Electric Utilities has made investments in the transmission system to address aging infrastructure, increase the capacity and efficiency of transmission line usage[18], and integrate new technologies. This allows us to significantly lower our long-term maintenance costs and better position us for accommodating renewable energy. Our large generator interconnection requests have increased by more than eight times since 2017, with about 95% of all requests being carbon-free resources. Because these connections are being made at the transmission-level, our team must complete feasibility studies for the regional transmission operator. These studies are very involved, yet even with the large spike, our team has a 100% on-time completion rate for all necessary studies. We are also sharing the lessons we've learned and successes we have achieved with a PJM Interconnection task force to help improve the process and reduce the backlog of requests within PJM.

Figure 12: Reimagining Energy Delivery



[18] *Public Utilities Fortnightly has named PPL Electric Utilities as a Top Innovator for 2021 for its industry-leading use of dynamic line rating technology on its transmission lines to increase electricity delivered over existing transmission lines.*

New transmission capacity on the scale necessary to decarbonize the economy will need to be supported by regulatory policies that facilitate permitting, siting and financing of this critical infrastructure. PPL recently acquired a small ownership interest in SOO Green, a 350-mile underground transmission project that seeks to connect the MISO and PJM power markets to support growing demand for clean energy. SOO Green seeks to tackle siting, permitting and other challenges to quickly and cost-effectively building transmission by developing high-voltage transmission lines underground along major rail cooridors. We will lend our capabilities and transmission expertise to help support the success of this project, and we will gain valuable insight into this innovative approach.

Our gas distribution infrastructure will need to support continued demand for gas where full electrification of heating and industrial and commercial operations may not make sense, and in the future accommodate the addition of alternative fuels to reduce the carbon footprint of the gas being delivered. PPL will consider development of energy system plans that address both electric and gas distribution operations to help drive efficiencies, maintain critical infrastructure and help preserve options for customers. This system-wide planning approach will be particularly important for Rhode Island as we prepare to partner with the state in meeting clean energy goals.

Goal: Support adoption of electric vehicles through expansion of electric vehicle charging.

PPL companies are supporting electric vehicle adoption through programs that improve accessibility to charging infrastructure and connect customers with tools and information to make informed choices. Electrification of the transportation sector not only reduces CO_2 emissions but is expected to contribute to increased electricity sales and the opportunity for investment in make-ready work for vehicle chargers.

In September 2021, PPL's utilities joined the Electric Highway Coalition, a partnership of 17 U.S. utilities established to support the development of a seamless network of rapid electric vehicle charging stations connecting major highway systems. The coalition's focus includes optimizing the placement of infrastructure and complementing existing travel corridor fast charging sites.

LG&E and KU have deployed 20 level 2 medium-speed chargers in public locations that they own, operate and maintain. Looking forward, the company also plans to deploy up to eight additional fast-charging stations along major Kentucky highway corridors, with four of the eight stations subject to state funding. LG&E and KU are in the early stages of a system study that outlines capacity in areas on the utilties' system that are well suited for fast chargers. LG&E and KU are also offering customer-facing programs to encourage EV adoption, including a vehicle charging program that provides cost-effective leases for customers to host a charging station at their locations. Customers can shop and compare EVs and calculate costs savings over time through an online marketplace available on LG&E and KU's website.

PPL Electric is working with SEPA to develop a long-term EV charging strategy for its 29-county service territory. PPL Electric is not permitted to own EV chargers; however, the utility is using data analytics to determine the most advantageous and likely fast charger locations and developing a make-ready process to support installation of EV chargers. Through its interconnection process, PPL Electric is currently coordinating the connection of 29 new high-speed chargers.

Conclusion

2021 has been a transformational year for PPL. We strategically repositioned the company to be a high-performing U.S.-focused energy company. We delivered award-winning service at competitive prices and were recognized for our innovative, technology-driven efforts to make our energy grid smarter, cleaner and more resilient. We invested more in clean energy technology R&D than ever before, with tens of millions of dollars committed to an innovative early-stage investment platform. We are partnering and leading efforts to bring about the commercial deployment of technologies that we believe will advance our efforts to achieve net-zero emissions from our operations and support our customers, investors, states and communities' desire for affordable, reliable and clean energy. We do not believe that these attributes are mutually exclusive. Our analysis conducted as part of this report and through our generation IRP demonstrates what may be possible under various scenarios. We are confident that a focused, deliberate effort to be pursued over the next decade will put us on a path to achieve our clean energy goals and deliver on our strategic commitment to advance a cleaner energy future.

About this report

The goals and projects described in this report are aspirational; as such, no guarantees or promises are made that these goals and projects will be met or successfully executed. Furthermore, this report contains data, statistics and metrics that are non-audited estimates, not prepared in accordance with generally accepted accounting principles (GAAP), continue to evolve and may be based on assumptions believed to be reasonable at the time of preparation, but should not be considered guarantees and are subject to future revision.

Metrics and Targets

PPL provides an annual greenhouse gas inventory in our Corporate Sustainability Report with five years of emissions data. Categories of emissions cover scopes 1, 2 and 3 CO_2e emissions, including owned generation, fleet vehicles, SF_6 used in electric transmission and distribution operations, methane emissions from natural gas operations, and purchased gas and electric. Carbon intensity is also reported on a revenue and generation basis.

On an annual basis, we report progress toward our carbon emissions reduction goal. Our 2050 goal covers all scope 1 and 2 CO_2e emissions except for methane emissions from our natural gas distribution operations (scope 1), which totaled just over 22,000 metric tons of CO_2e in 2020. PPL classifies LG&E and KU's purchased power net of wholesale as a scope 2 emission, which is also included in our goal. We believe that greenhouse gas accounting protocols related to purchased power for end-use customers (not used by or otherwise combusted by the utility) would also support the reporting of these emissions as scope 3.

Our current fleet electrification goals are aimed at collectively reducing carbon emissions from our fleet vehicles by 5,000 metric tons by 2030, approximately a 20% reduction from 2020 levels. This goal is expected to be replaced by more ambitious fleet vehicle goals in the near future, and we anticipate reporting progress against new goals going forward.

Emissions associated with our purchased electricity in Pennsylvania and gas in Kentucky are relevant to core operations of our transmission and distribution businesses, and therefore, we believe that we collect and report these scope 3 emissions with a high degree of accuracy. However, PPL's delivery companies have limited discretion over the resource mix of this purchased power, which is subject to state portfolio mandates and approval of direct costs passed through to customers. We recently began collecting data associated with employee commuting and travel and will also include these scope 3 emissions in our 2021 reporting year sustainability reporting.

***Figure 13*: PPL 2050 Net-Zero Emissions Goal**

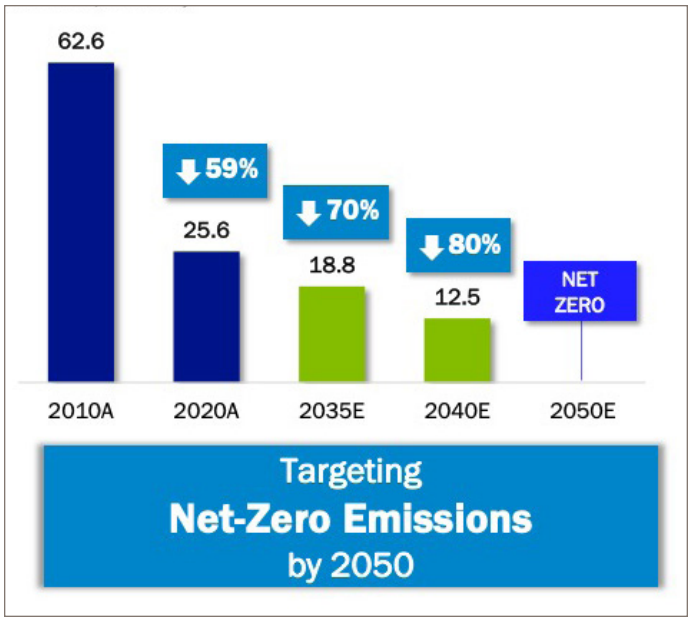
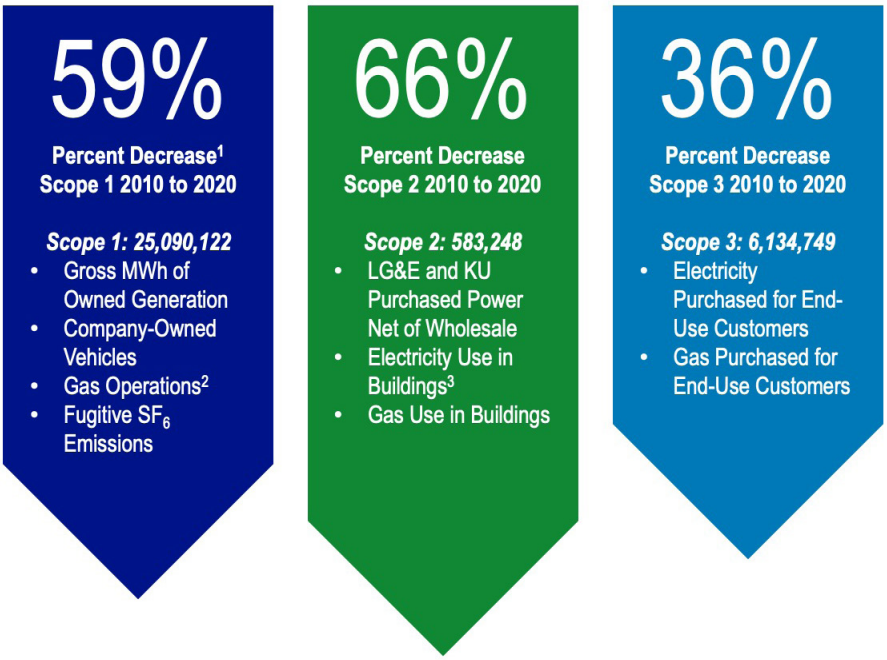


***Figure 14*: 2020 CO_2e emissions (metric tons)**



[1] 2010 Scope 1 plant emissions is the only data point that includes PPL Energy Supply, LLC.
[2] Gas Operations are not included in the net-zero emissions goal. 2010 baseline data is estimated.
[3] LG&E and KU emissions captured in Scope 1 Gross MWh.

Appendix

Task Force on Climate-Related Financial Disclosures Index

Topic	Recommended Disclosure	PPL's Response Mapping
Governance		
Disclose the organization's governance around climate-related risks and opportunities.	Describe the board's oversight of climate-related risks and opportunities.	Page 9
	Describe management's role in assessing and managing climate-related risks and opportunities	Page 10
Strategy		
Disclose the actual and potential impacts of climate-related risks and opportunities on the organization's businesses, strategy, and financial planning where such information is material.	Describe the climate-related risks and opportunities the organization has identified over the short, medium and long term.	Pages 30-34
	Describe the impact of climate-related risks and opportunities on the organization's businesses, strategy and financial planning.	Page 13
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Pages 23, 29
Risk Management		
Disclose how the organization identifies, assesses, and manages climate-related risks.	Describe the organization's processes for identifying and assessing climate-related risks.	Page 9
	Describe the organization's processes for managing climate-related risks.	Page 13
	Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organization's overall risk management.	Pages 9, 13
Metrics and Targets		
Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material.	Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	Pages 13, 23, 29
	Disclose Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas (GHG) emissions, and the related risks.	Pages 29 and 31-34
	Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	Page 29

Energy Group Metrics and additional disclosures are available our sustainability disclosure website.

Table 1: Potential Physical Risks and Response

Climate Risk	Asset Category	Asset Type	Potential Impact	Risk Mitigation
High Winds	Generation	All	Damage to power plant infrastructure	Engineering evaluation of facilities and structural upgrades
		Solar	Increased dust and debris on solar panels, reducing output or damaging racking. Potential impact damage from blowing debris.	More frequent inspections
	Electric Transmission & Distribution	Power lines and poles	Damage to equipment, derating or knocking generation offline, and more frequent power outages due to downed trees and limbs	• System hardening, including stronger poles and wires • Vegetation management • Increased automation technology to reroute power • New power lines and substations to provide flexibility and redundancy
	Gas Distribution	Gas Storage & Distribution	Damage to gas storage and distribution infrastructure	Engineering evaluation of facilities, including wind consideration for structural upgrades
			Loss of power	Installation of back-up generation
Extreme Cold	Generation	All	Frozen equipment, sensing lines, water lines and valves disrupting plant operations	• Enclosures for exposed sensitive equipment and systems • Expanded heat trace and insulation programs • Expanded cold weather procedures
		Fossil	Frozen coal pile and fuel supply issues and related generation derates	Implement enhanced inventory management (pile management; delivery strategies; keep the system operating to mitigate freezing and bridging; direct unloading of fresh coal)
		Solar	Solar trackers and other infrastructure may be damaged that can reduce output	More frequent inspections and as needed sweep off snow and/or de-ice panels
	Electric Transmission & Distribution	All	Damage due to severe icing on electrical equipment and downed trees and limbs,leading to extended power outages	• System hardening, including stronger poles and wires • Vegetation management • Increased smart grid technology to reroute power • New power lines and substations to provide flexibility and redundancy
	Gas Distribution	All	Frozen equipment, sensing lines, water lines and valves disrupting gas system operations	• Enclosures for exposed sensitive equipment and systems • Expanded heat trace and insulation programs • Expanded utilization of catalytic heaters • Enhanced alarm systems • Completed bare steel and cast-iron main piping replacements

Climate Risk	Asset Category	Asset Type	Potential Impact	Risk Mitigation
Precipitation	Generation	All	Damage to equipment, changes in operations and potential loss of facilities	Engineering evaluation of facilities and water resiliency improvements
		All	Reduced access due to flooding	Rerouting traffic and alternative access to equipment
		Fossil	Increased non-permitted discharges as a result of flooding	• Expanding and maintaining overflow and drainage paths • Enhancing flood protection systems
			Wet coal piles and fuel and reagent delivery disruptions and related generation derates	Implement enhanced inventory management (pile management for increased sheet flow; delivery strategies; direct unloading of fresh coal)
		Solar	Positive effects from precipitation washing panels. Reduced output from residue and scale build-up. Reduced output from ice and snow cover on solar panels.	More frequent inspections and cleanings
	Electric Transmission & Distribution	All	Damage to equipment, loss of facilities, and/or reduced access to facilities due to flooding, slowing power restoration	Evaluation of mitigation for critical equipment and substations from flood-prone areas
			Damage due to severe icing on electrical equipment and downed trees and limbs, leading to extended power outages	• System hardening, including stronger poles and wires • Vegetation management • Increased automation technology to reroute power • New power lines and substations to provide flexibility and redundancy
	Gas Distribution	All	Damage to equipment, loss of facilities, and/or reduced access to facilities due to flooding	• Engineering evaluation of facilities and perform water resiliency testing as applicable • Evaluation of mitigation for critical equipment from flood-prone areas • Completed bare steel and cast-iron main piping replacements
Extreme Heat	Generation	Fossil	Reduction in plant efficiency and available generation capacity due to higher ambient air temperatures and high coolant temperatures	• Inlet air cooling for natural gas units • Enhanced for cooling system infrastructure of coal units
			Potential physical damage if temperature thresholds are exceeded, forcing curtailment to avoid a safety hazard	Expanded equipment redundancy and critical spares
			Power plant components may need to be replaced more frequently	Expanded equipment redundancy and critical spares
			Increased risk of exceeding thermal discharge limits	Enhanced cooling system infrastructure
		Solar	Reduced efficiency and output if temperatures exceed ratings	Enhanced cooling system infrastructure
	Electric Transmission & Distribution	Transformers	De-rating, increased load, decreased capacity, decreased operational flexibility, increased maintenance, accelerated aging, loss of equipment life	• Pumps and fans for substation cooling • Real time and daily performance monitoring • Remote adjustments to optimize substation operations • New and expanded substations to provide flexibility and redundancy
		Power lines	De-rating and reduction in available transmission capacity	• Annual transmission planning and load forecasting, inclusive of weather factors. • Vegetation management. Increased automation to reroute power. • New power lines to provide flexibility and redundancy

Table 2: Potential Transition Risks and Response

Risk Type	Drivers	Potential Impact	Risk Mitigation and Opportunity Actions
Regulation, Policy	• Carbon regulation • Expanded renewable energy regulation • Mandates on existing products and services • Ownership limitations • Permitting and siting challenges • Static ratemaking mechanisms	• Uncertain or poorly constructed regulatory policy can lead to compliance challenges, resource constraints, unnecessary costs for consumers and premature retirement of viable energy assets. • Volatility in renewable energy standards and associated credit markets due to legislative or regulatory intervention. • Legislative limitations on utility ownership of renewables and other generation sources in restructured states limit the extent of activities those companies may engage in to support the clean energy transition. • Delays in permitting and siting transmission and renewable energy infrastructure due to land use concerns and lack of agency co-ordination, as well as environmental justice considerations. • Traditional ratemaking structures may constrain utilities seeking innovative solutions to incorporate new technologies, services, policies and market participants.	• Proactive engagement and advocacy with policymakers, regulators and community leaders; early stakeholder outreach to potentially impacted communities. • Experience operating in a dynamic regulatory environment in all its geographic locations and carefully monitors evolving and emerging legislation and regulations at the local, state and federal levels. • Greater electrification of the economy to reduce carbon, in particular electrification of cars and heating, could support increased electricity sales and require additional investments in distribution networks. This could also require additional investment in generation in Kentucky to meet increased load. • Significant investments in smart grid technology and the flexibility of delivery networks to accommodate changing customer preferences and needs to enhance the integration of DERs provides the opportunity for wires-only companies to take on an expanded role in actively managing distribution networks through both network and non-network solutions, products and services. • Energy system planning across assets to maximize efficiencies. • Leverage alternative forms of ratemaking to support climate change mitigation and adaptation-related activities, renewable energy expansion, energy efficiency and conservation, and electrification. Further, utilize these mechanisms to improve financial and environmental sustainability.
Market	• Changing customer behavior • Evolving technologies and policies allowing new entrants into the market • Increase in distributed energy resources • Regulatory changes impacting wholesale and retail markets	• Decreased revenues due to reduced demand for products and services. • Competitive clean energy solutions can erode regulated rate base and diminish relationship with customer. • Increases in distributed energy resources and private renewable energy could pose a reliability challenge to delivery networks if not incorporated and managed appropriately. Such an increase could make it more difficult to monitor and adequately provide necessary 24/7 generation and to manage volatility in demand for power. • Changes in market access, including how market participants aggregate and operate, can cause market volatility and down-stream distribution system operation issues.	• Enabling the deployment of renewables and distributed energy resources through direct investments and actively finding ways to provide clean energy options to customers. • Energy grid modernization to enable reliable integration of more renewable and low-carbon energy sources, enhance grid resiliency and reduce emissions. • Disciplined expansion of unregulated renewable and distributed energy investments, including solar and energy storage. • Solutions, driven by customer demand and favorable policies • Development and implementation of expanded distribution system operation models (e.g., DSO), and customer DER integration platforms and portals. • Improved coordination between RTOs/ISOs, utility transmission operations, utility distribution operations and behind-the-meter generation.

Risk Type	Drivers	Potential Impact	Risk Mitigation and Opportunity Actions
Reputation	• Growing public concern over climate change • Shifts in consumer preference • Increased costs resulting from clean energy transition • Volatile wholesale energy markets	• Reduced access to capital due to coal exposure. • Increased volatility in fossil fuel costs (e.g., natural gas) leading to volatile wholesale energy prices and associated customer generation and gas distribution rates impacting moderate and low-income customer bills. • Decreased customer satisfaction. • Regulatory pressure on allowed returns. • Reduced pool of insurance carriers due to carriers' concern on coal exposure.	• Risk assessments factor stakeholder input into long-term investment decisions. • Increasing renewable and non-carbon emitting assets and economically retiring coal fired-generation; driving down carbon emissions. • Providing affordable clean energy options and facilitating the interconnection of customer DER. • Enabling greater electrification of the economy, in particular the widespread adoption of electric vehicles and the electrification of industries previously powered by fossil fuels, could support increased electricity sales and require additional investments in T&D networks. • Provide new or alternative rate options for customers to enable customers to choose the best options that meet their socio-economic goals and objectives.
Technology	• Lack of commercial availability of deep decarbonization technologies • Costs to transition to clean energy technologies • Development of new systems to manage customer DER integration, improve T&D operations, and improve the customer experience	• Reduces clean generation options available for transition. • Negative reliability and affordability impacts. • Delays in economy-wide decarbonization. • Need to develop systems from the bottom-up, with few 'off-the-shelf' solutions available to utilize.	• Deploying resources to support R&D and commercialization of clean energy technologies for generation and gas distribution. • Supporting technology-neutral investments in R&D to expand availability of non-emitting resources. • Partnering with academia and industry in demonstration of clean energy technologies, including CCS and battery storage. • Leverage State and Federal funding opportunities to invest in new and innovative technological solutions.

Figure 1: ERM Process

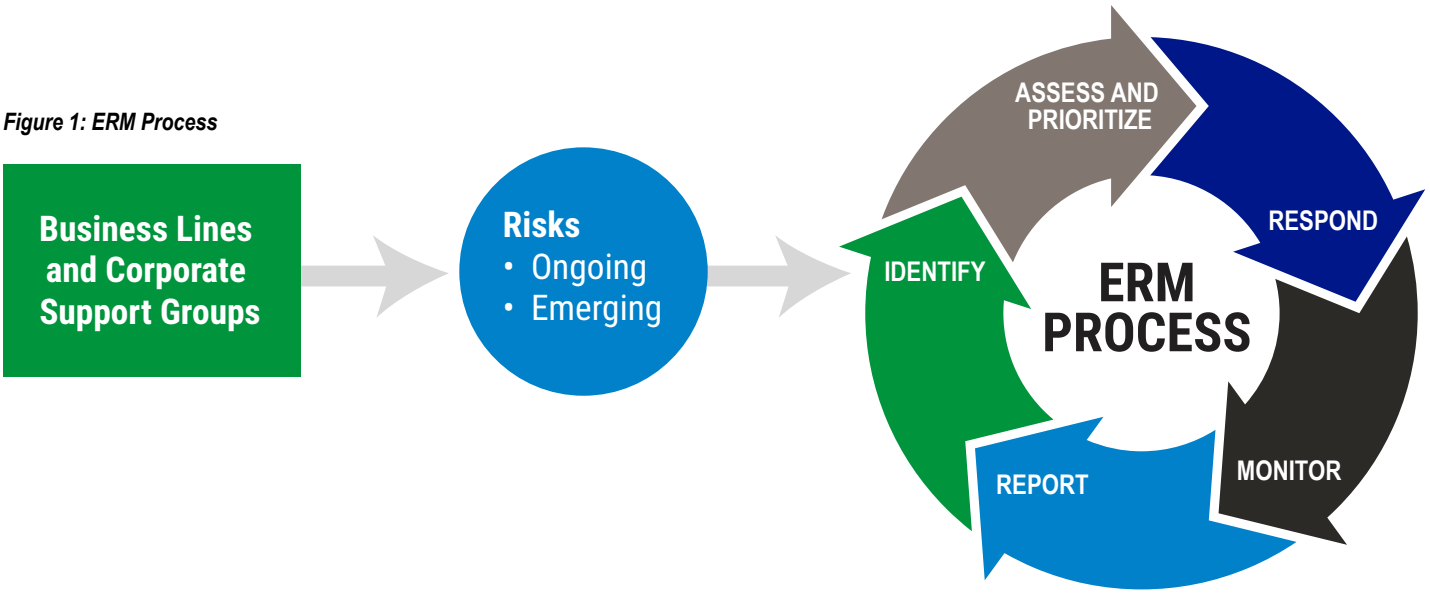


Figure 2: Board Committee Oversight of Climate-Related Issues

Governance and Nominating Committee	Oversees the company's sustainability-related policies and practices; reviews key corporate sustainability disclosures and receives regular sustainability and ESG reports, including discussion of key climate and clean energy trends, risks and opportunities.
Audit Committee	Receives quarterly reports on enterprise risk management. The Audit Committee regularly reviews risk management activities, including issues related to the transition of the utility sector, such as sustainability and climate-related issues, as well as activities related to the company's financial statements and disclosures, and certain legal and compliance matters.
Finance Committee	Annually reviews and approves a multi-year business plan and capital expenditure plan. The Finance Committee also approves major capital financing, acquisitions and divestitures. Climate-related issues are addressed in the business and capital plans.
Compensation Committee	Reviews and approves annually the compensation structure, including ESG goals and objectives, for the Company's executive officers.

Figure 3: Ensuring Reliable Generation Operations

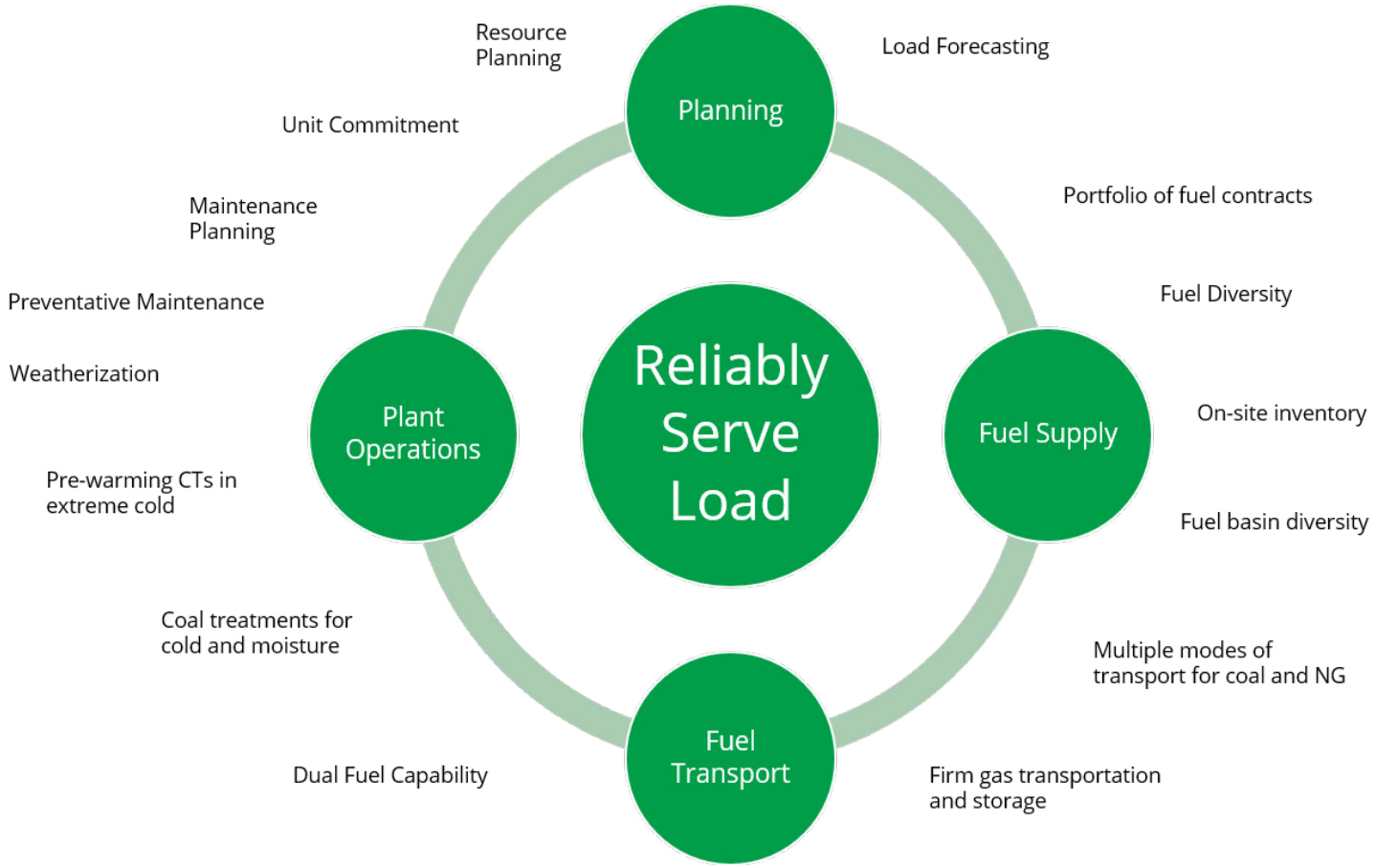
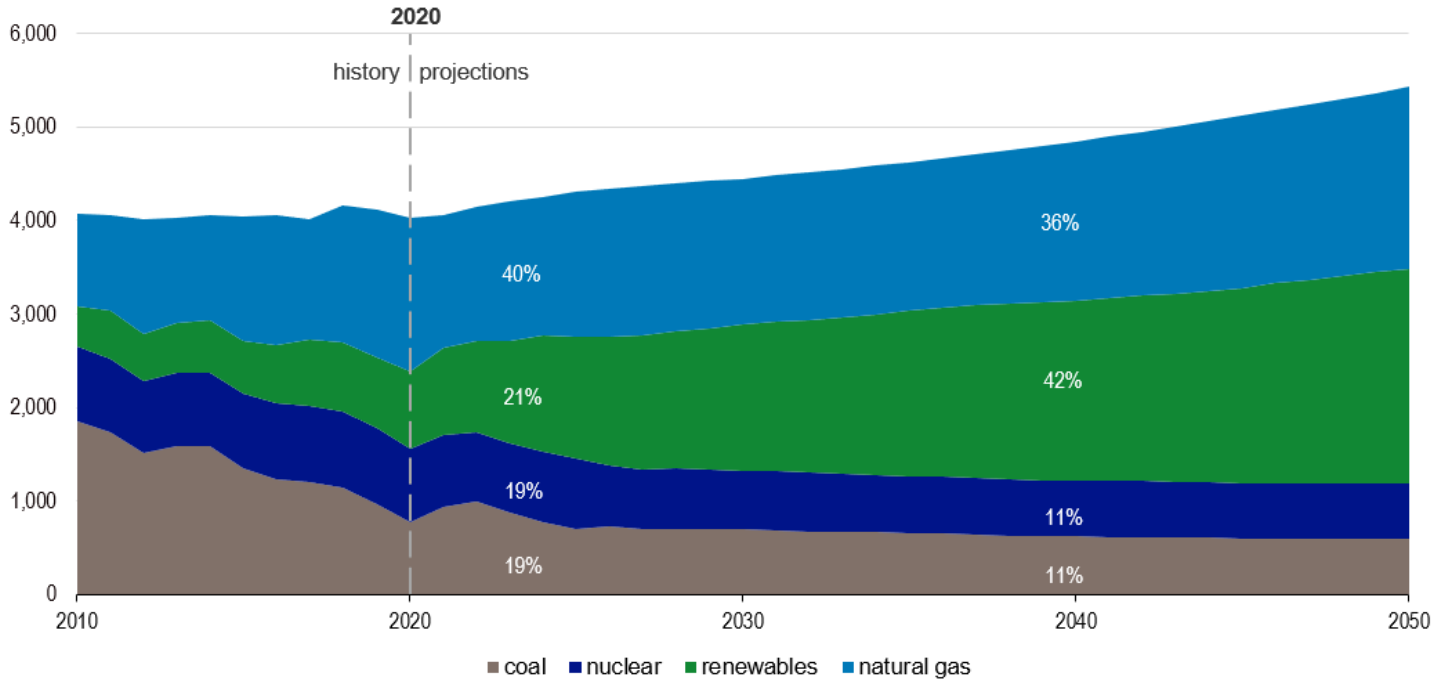


Figure 4: U.S. Electricity Generation from Selected Fuels (2010-2050)



Source: U.S. Energy Information Administration, Annual Energy Outlook 2021 (AEO2021)

Figure 5: Energy Requirements

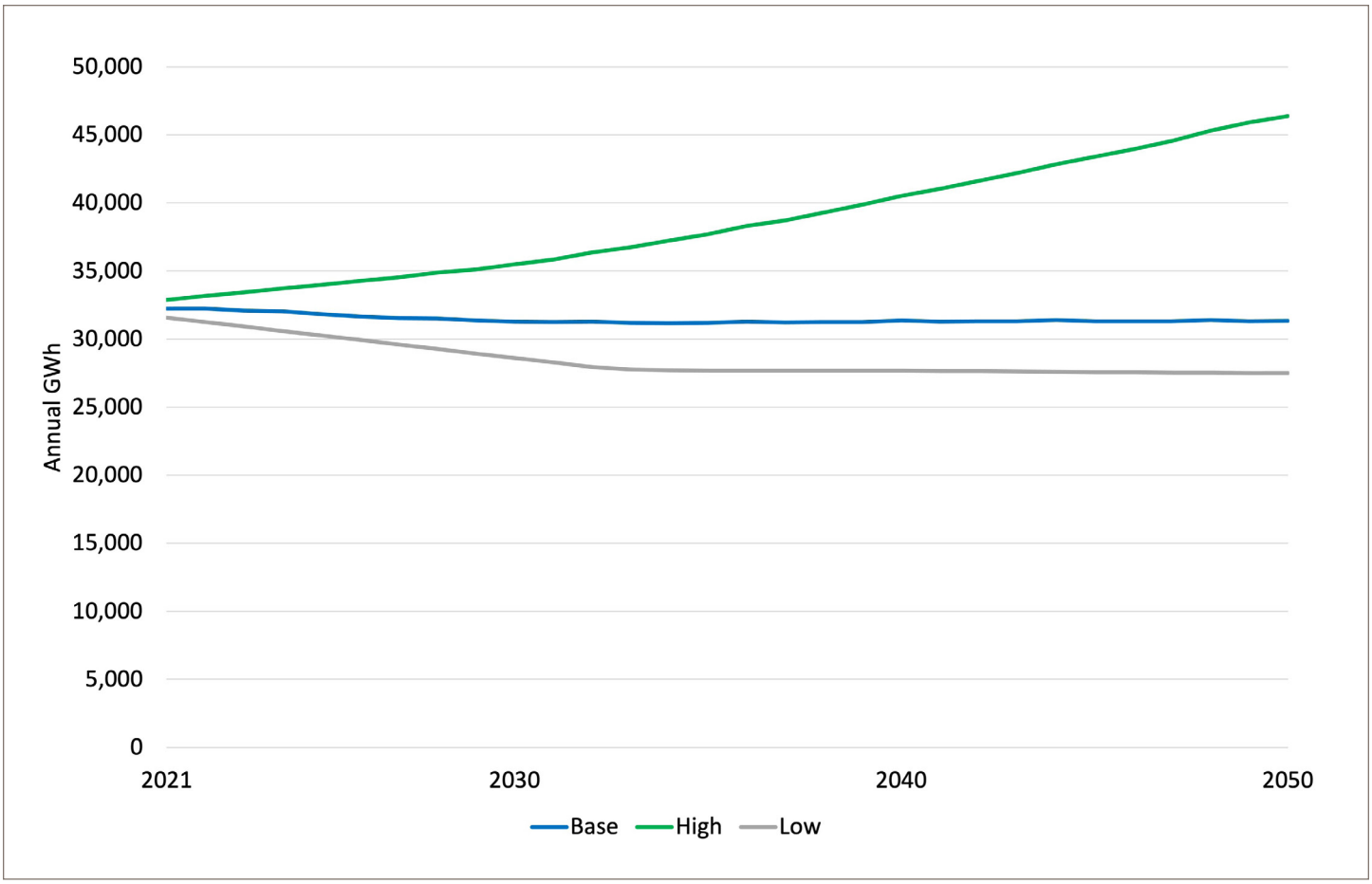


Figure 6: Number of Electric Vehicles

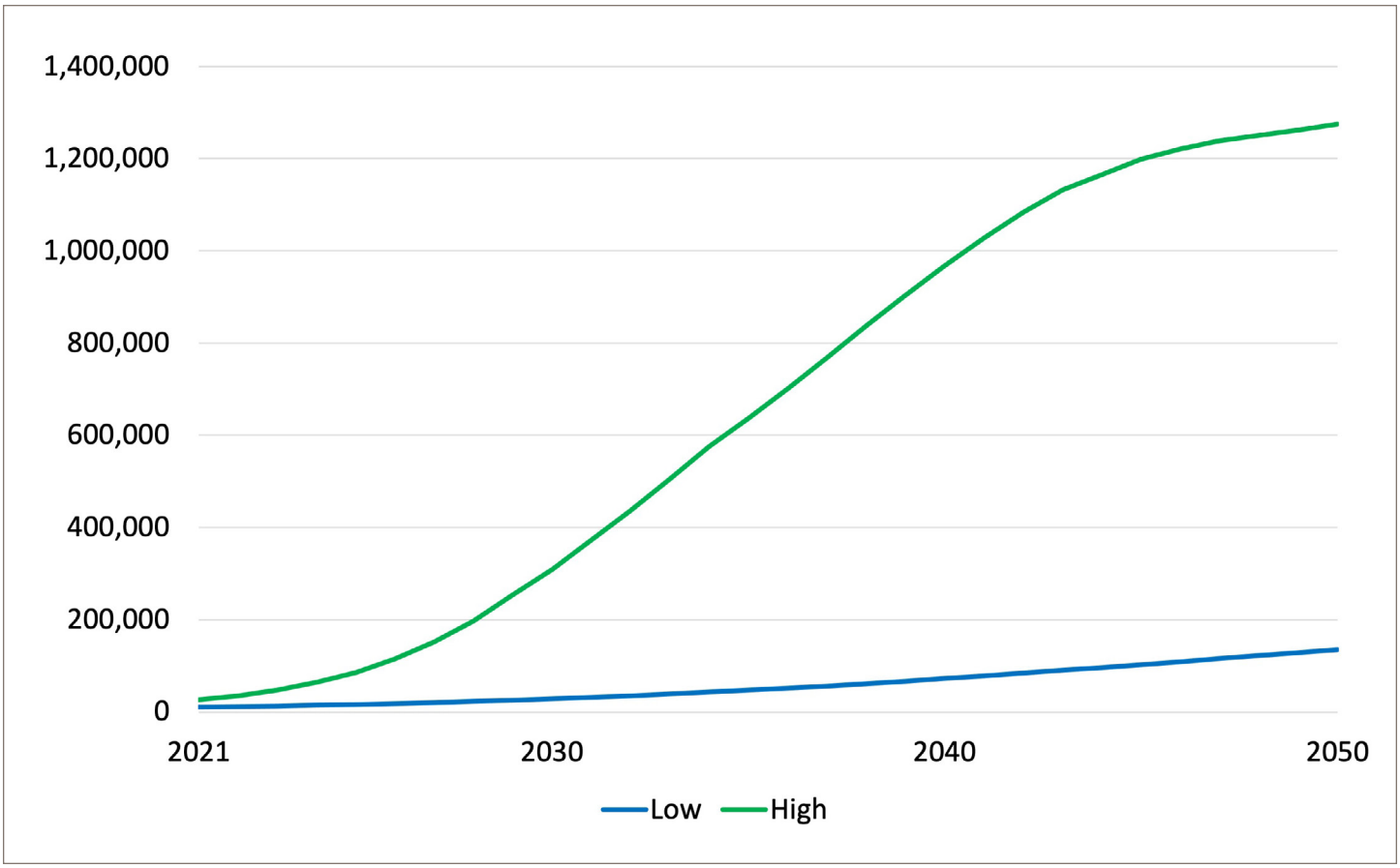


Figure 7: Distributed Solar Installed Capacity

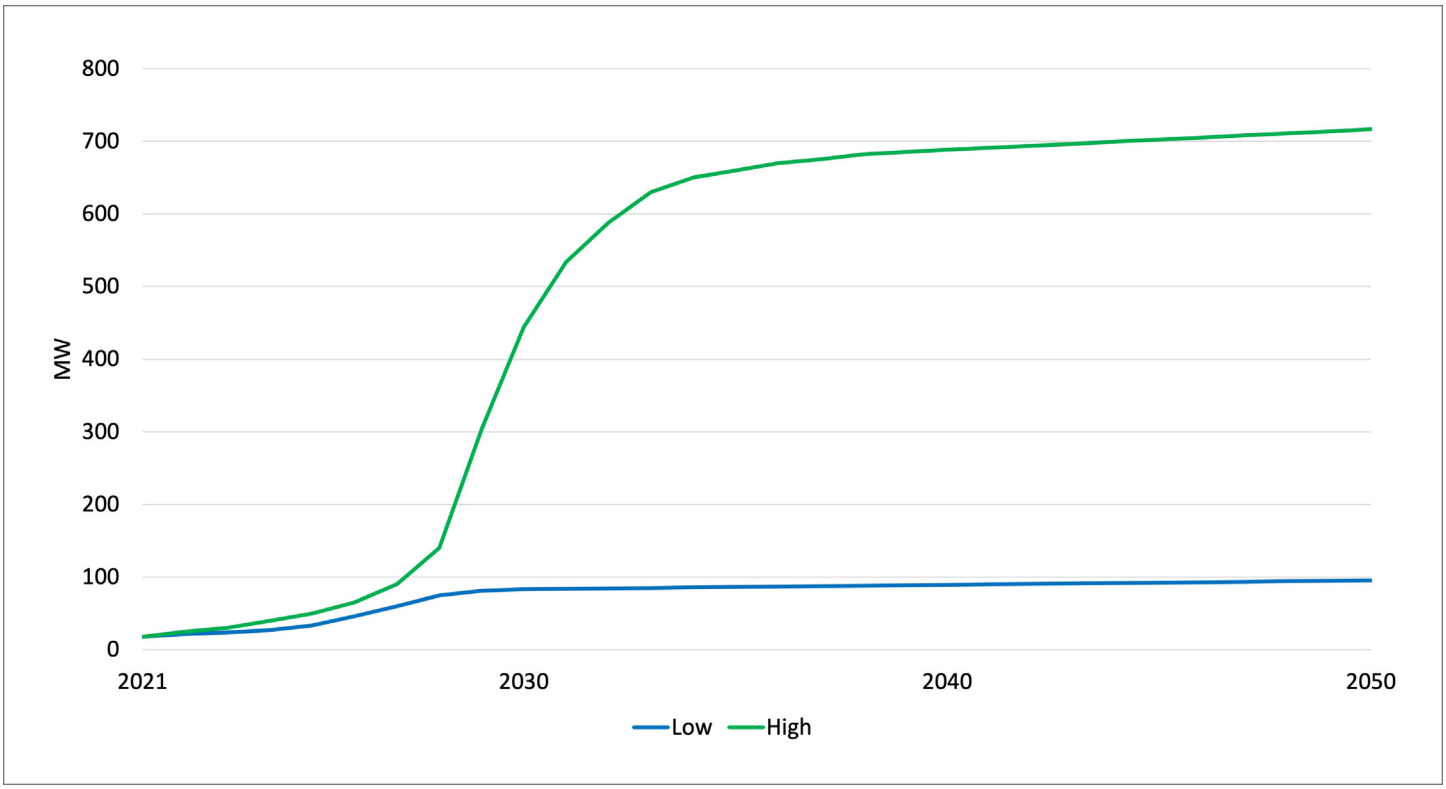


Figure 8: Comparison of Scenarios

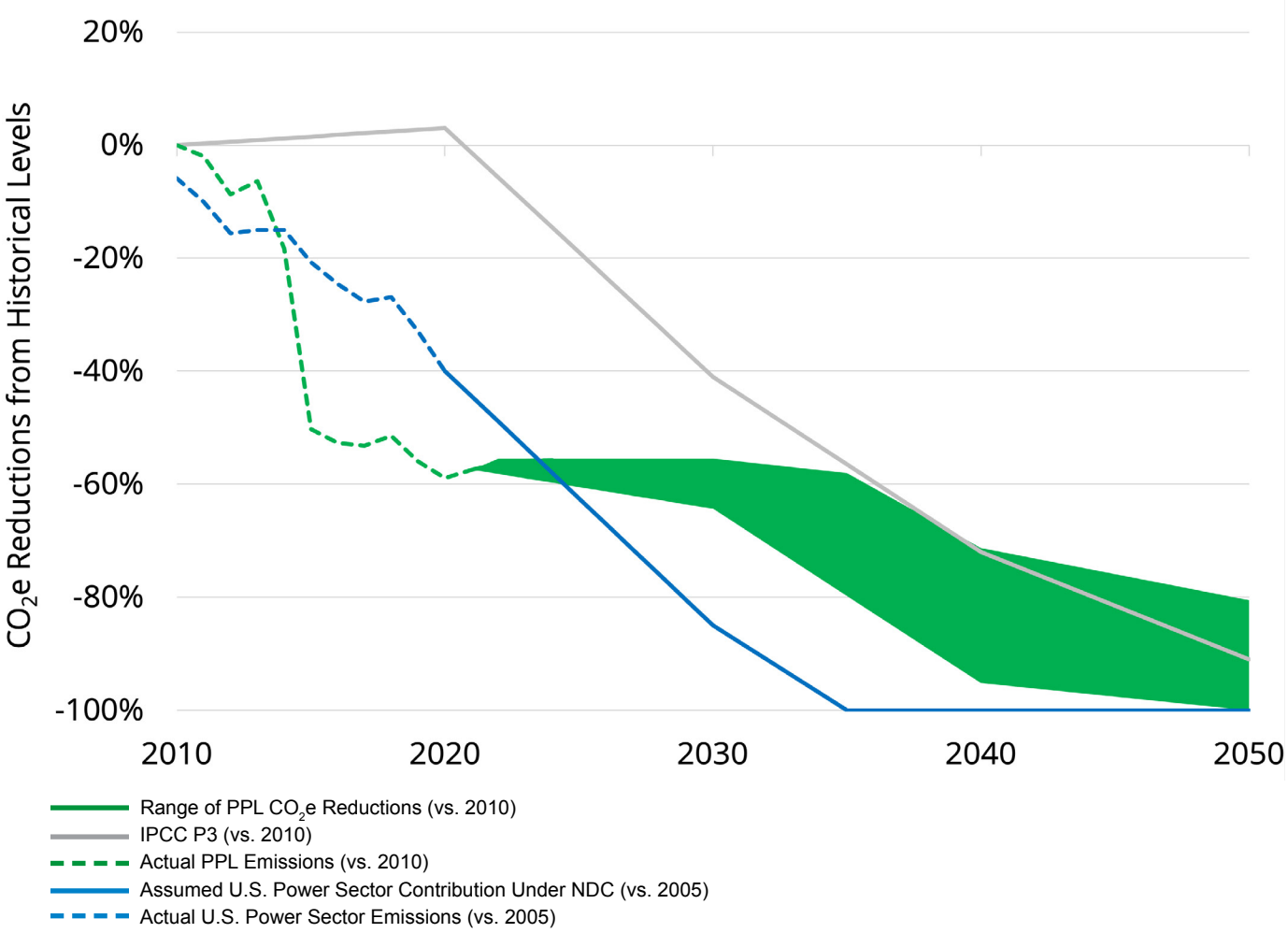


Figure 9: Energy Mix

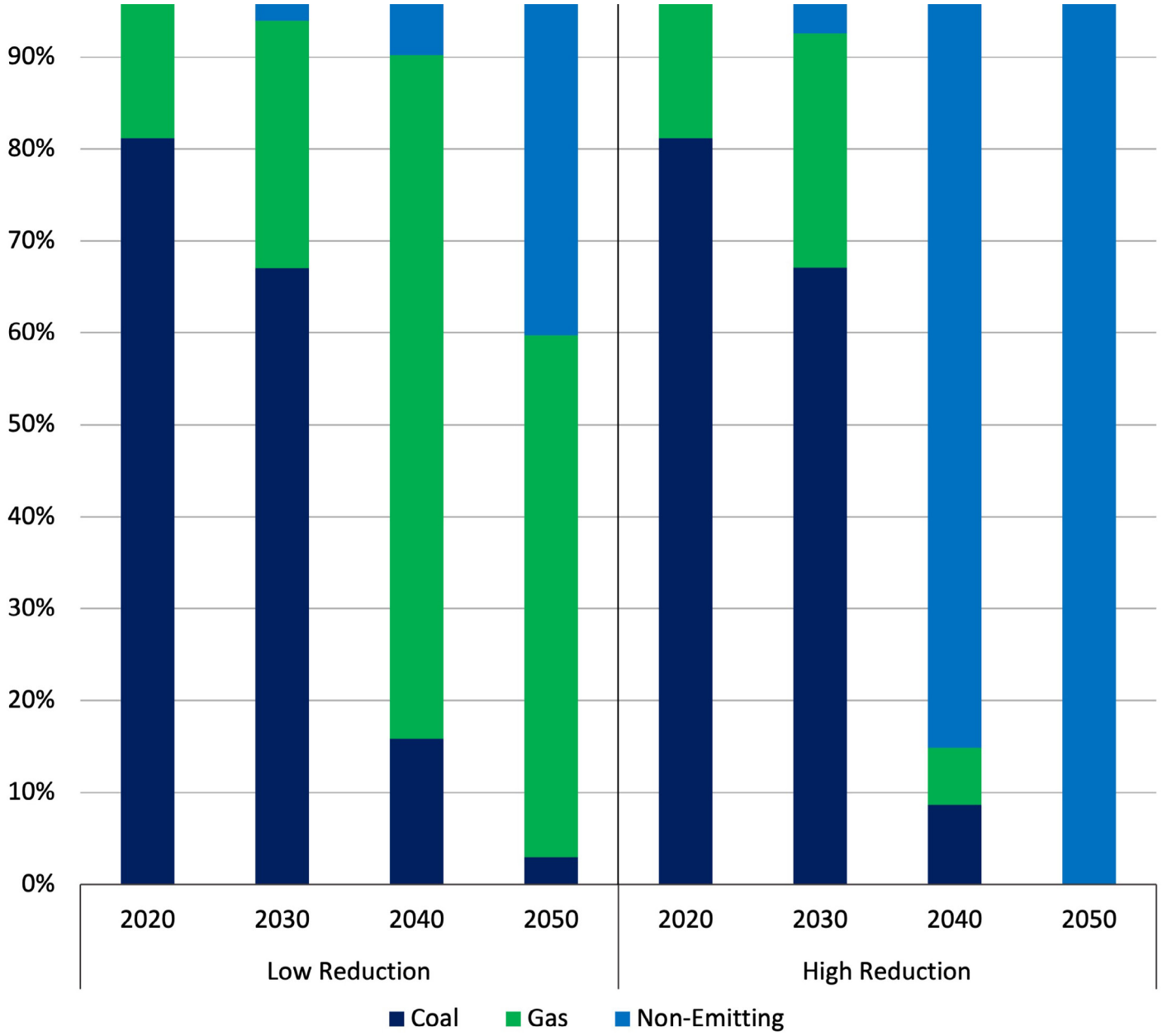


Figure 10: CO_2e Emissions (Metric Tons)

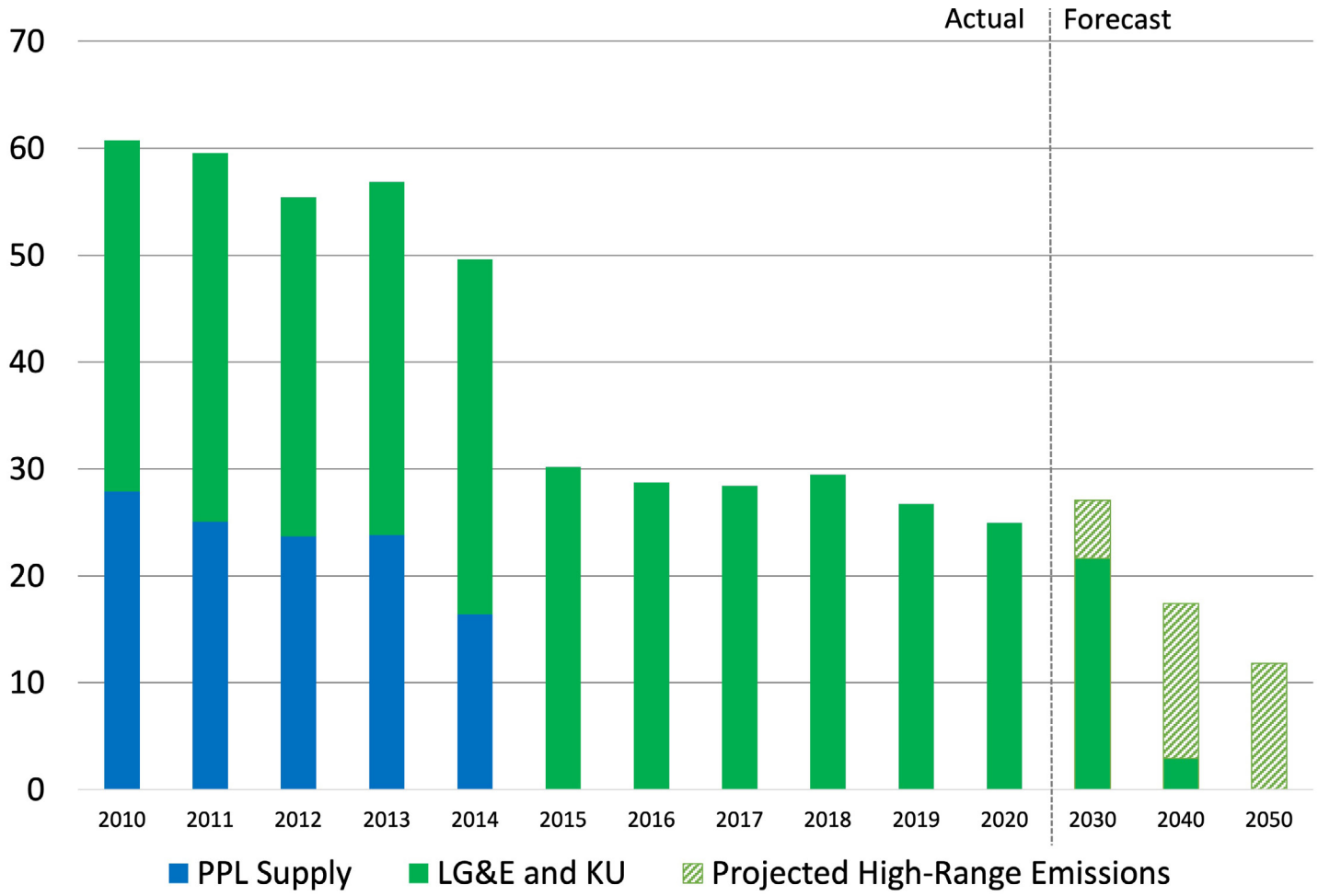


Figure 11: PPL's Kentucky Baseload Generation Resources

Power Plant	Unit	COD	Owned Capacity MW	Curently Project End of Economic Useful Life (1)
Coal				
Mill Creek	1	1972	300	2024
E.W. Brown	3	1971	412	2028
Mill Creek	2	1974	297	2028
Ghent	1	1974	475	2034
Ghent	2	1977	485	2034
Ghent	3	1981	481	2037
Ghent	4	1984	478	2037
Mill Creek	3	1978	391	2039
Mill Creek	4	1982	477	2039
Trimble County	1	1990	370	2045
Trimble County	2	2011	549	2066
Natural Gas				
Cane Run (CCGT)	7	2015	662	2055
Total Baseload			5377	

(1) Per most recent deprection study filed in Case Nos. 2020-00349 and 2020-00350

Figure 12: Reimagining Energy Delivery

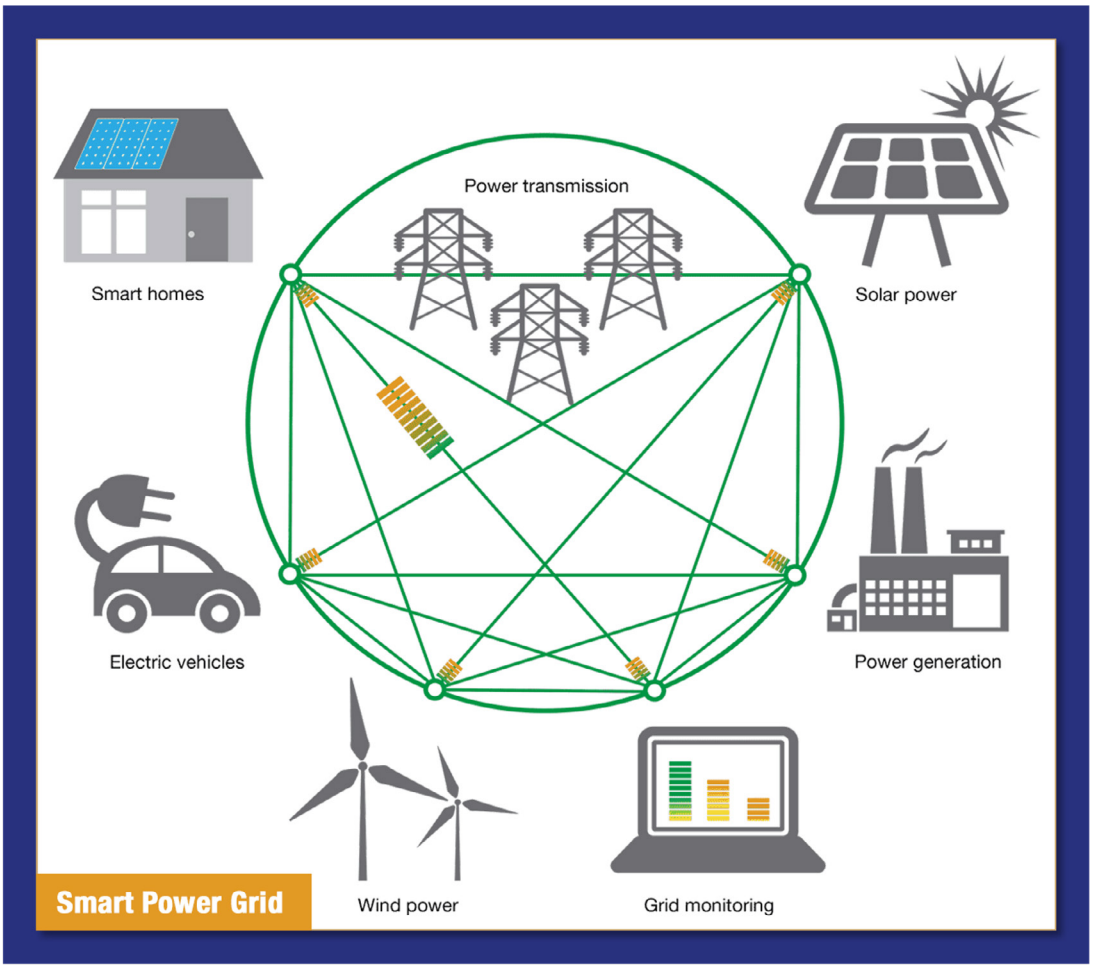


Figure 13: Projected PPL carbon emissions

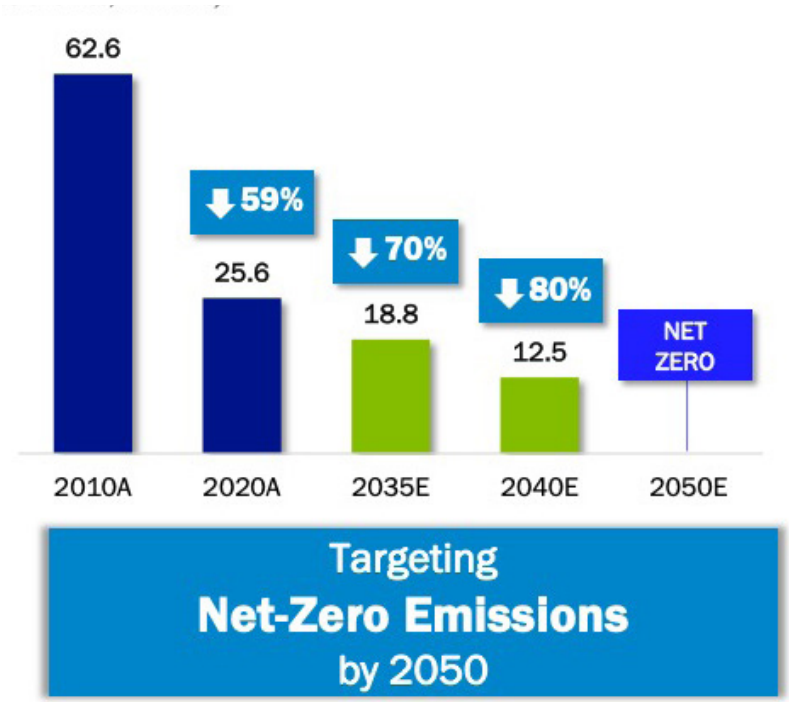
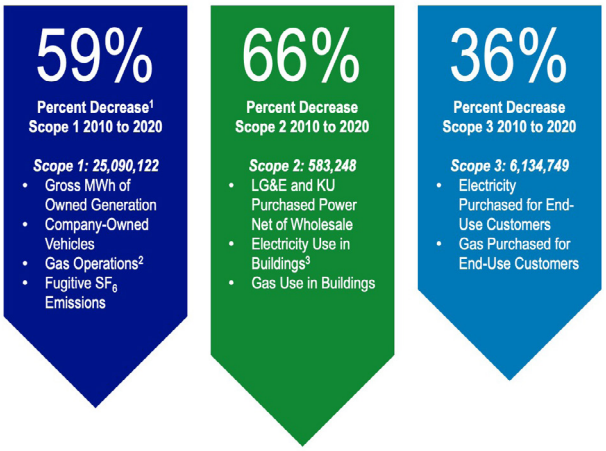


Figure 14: 2020 CO_2e emissions (metric tons)



[1] 2010 Scope 1 plant emissions is the only data point that includes PPL Energy Supply, LLC.
[2] Gas Operations are not included in the net-zero emissions goal. 2010 baseline data is estimated.
[3] LG&E and KU emissions captured in Scope 1 Gross MWh.

FORWARD-LOOKING STATEMENTS IN THIS CLIMATE ASSESSMENT REPORT

This Climate Assessment Report ("Report") contains forward-looking statements regarding, among other things, the clean energy transition, our clean energy targets and achievement of climate commitments by certain dates, strategies or goals related to environmental, social, safety and governance performance, future energy demand, the availability and cost of natural gas, carbon reduction, third-party decarbonization, the growth of solar and other renewable forms of electricity generation and storage, potential rates of reduction in coal-fired electricity generation in Kentucky, low carbon technologies, enhancement of the grid, the expected operating life of existing coal-fired electricity generation plants and PPL Corporation's corporate strategy. These statements, and all others that reflect beliefs, plans, estimates, projections, goals, targets, expectations, strategy or any other forward-looking information, are "forward-looking statements" within the meaning of the federal securities laws. PPL Corporation believes that the forward-looking statements in this Report reflect reasonable expectations and assumptions. However, it is important to understand that forward-looking statements, and their underlying assumptions, are subject to a wide range of risks and uncertainties, both known and unknown.
Any number of factors could cause actual results to be materially different from those discussed in the statements, including: market demand for energy in our service territories; weather or other conditions affecting customer energy usage and operating costs; the effect of any business or industry restructuring; the profitability and liquidity of PPL Corporation and its subsidiaries; operating performance of its facilities; environmental, legal and regulatory requirements and the related costs of compliance; development of new projects, markets and technologies for the generation and delivery of electricity; performance of new ventures; asset or business acquisitions and dispositions; receipt of necessary government permits, approvals, rate relief and regulatory cost recovery; capital market conditions and decisions regarding capital structure; the outcome of litigation against PPL Corporation and its subsidiaries; the securities and credit ratings of PPL Corporation and its subsidiaries; political, regulatory or economic conditions in states, regions or countries where PPL Corporation or its subsidiaries conduct business; new state, federal or foreign legislation; commitments and liabilities of PPL Corporation and its subsidiaries; and catastrophic events such as fires, earthquakes, explosions, floods, hurricanes and other storms, droughts or other similar occurrences as well as cyber intrusion or other terrorist incidents and their direct or indirect effect on PPL Corporation's businesses and the U.S. or U.K. electricity grids. All forward-looking statements in this Report should be considered in light of these important factors. Further information on these and other risks and uncertainties is available in PPL Corporation's Form 10-K and other reports on file with the Securities and Exchange Commission.