



**2022 PISA Annual Report – an Update on
the Company’s Clean Transition Plan**

The Empire District Electric Company d/b/a Liberty

February 28, 2022

Introduction

This report satisfies requirements of RSMo. 393.1400 based on the election to Plant in Service Accounting (“PISA”) by The Empire District Electric Company d/b/a Liberty (“Liberty-Empire” or the “Company”). This is the 2022 PISA Annual Update Report which provides an update on the Company’s Clean Transition Plan and updates the inaugural PISA report filed in February 2021 in Missouri Public Service Commission (“Commission”) File No. EO-2019-0046.

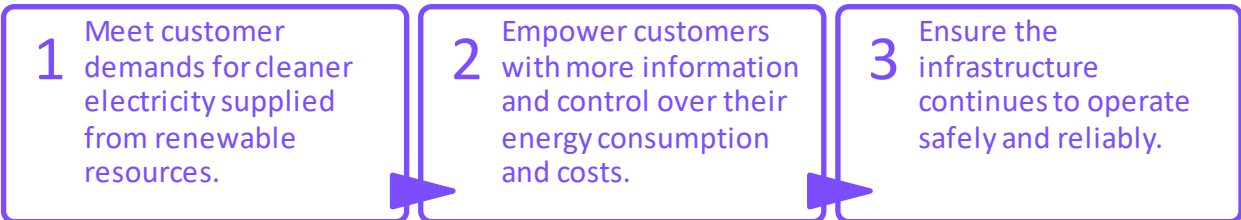
This report reflects Liberty-Empire’s current intentions regarding budget plans for the next five years to continue progress of Liberty-Empire’s Clean Transition Plan (the “CTP”). The CTP will enable Liberty-Empire’s electric grid to meet evolving customer needs today and in the future through cost management, modern technologies, and a transition to clean energy. The budget plans presented in this PISA Annual Update Report are a snapshot in time. Organizational priorities and plans are prone to shift based on evolving needs and technology resulting in adjustments to the reported budget and spending forecast.

- Liberty-Empire continuously evaluates and analyzes the needs of its customers and the electric grid, the condition of Liberty-Empire’s infrastructure, the costs and accessibility of modern technologies, and the availability of new technologies.
- Liberty-Empire continuously strives to make the most of every dollar and every hour of labor, to provide reliable and affordable electric service most efficiently to its customers.
- Additionally, it is important to note that emerging challenges with supply chains for specialty equipment could result in impacts to Liberty-Empire’s ability to execute on portions of this investment plan. Procurement leaders are constantly assessing this situation and notifying planners.
- As mentioned, plans are always being re-evaluated and are subject to change. For example, the Company’s next IRP, due to be filed in April 2022, can impact future projects (see the section “Timing of 2022 Integrated Resource Plan (IRP)” presented below).

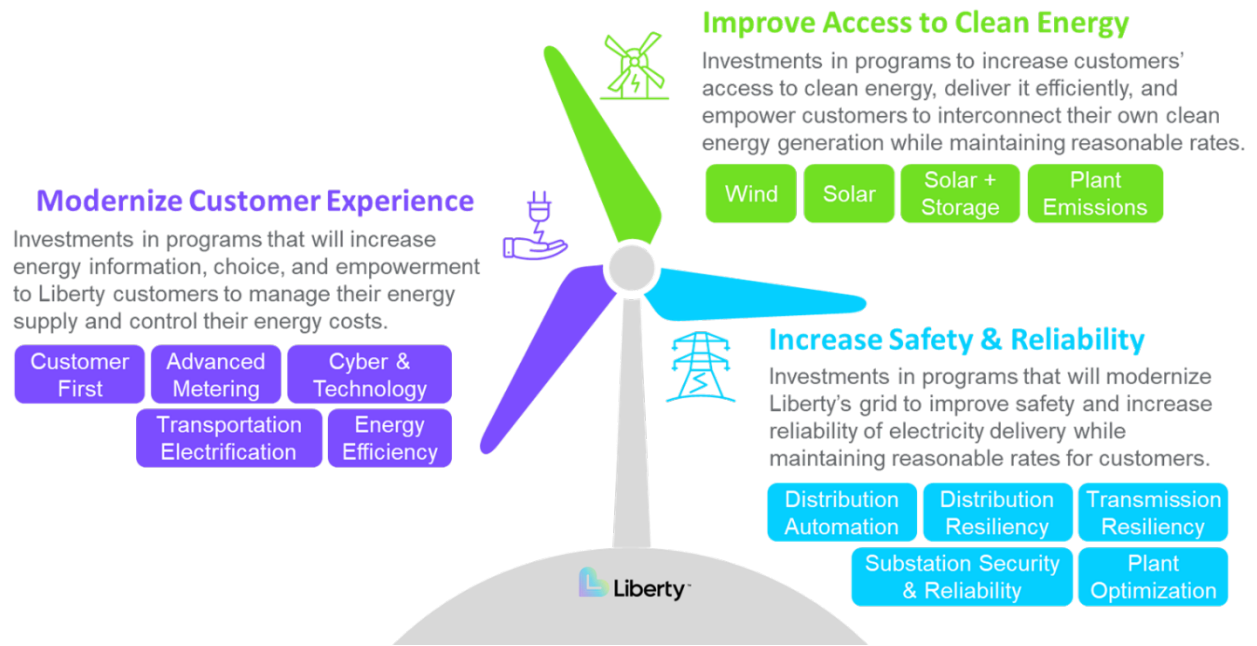
Liberty-Empire's Clean Transition Plan

Electricity is a critical contributor to our society and the economy. Emerging interest and adoption of distributed generation and electrification make it even more important. Emerging technology and a desire to reduce environmental impacts are driving Liberty-Empire to transition its electrical infrastructure and operations to meet the needs of its customers.

Liberty-Empire is focusing capital investment on its infrastructure in the Central Region (Missouri, Kansas, Arkansas, and Oklahoma) to:



This CTP embodies Liberty-Empire's organizational priorities to provide industry leadership in sustainability and pursue operational excellence. The CTP will establish access to clean energy for customers, modernize the customer experience, and increase safety and reliability of the electric infrastructure.



The CTP embodies Liberty-Empire’s organizational priorities to provide industry leadership in sustainability and pursue operational excellence. The CTP invests in technologies, infrastructure, and development of customer programs that transition Liberty-Empire’s electrical infrastructure and operations to meet the evolving needs of its customers today and in the future. Investments are focused in three key areas of transition:

1. Improve access to clean energy for all of Liberty-Empire’s electric customers.
2. Modernize how customers use, manage, and pay for their electricity.
3. Increase the safety and reliability of Liberty-Empire’s electric infrastructure.

Timing of 2022 Integrated Resource Plan (IRP)

Liberty-Empire plans to file its next triennial IRP in Missouri on April 1, 2022. This IRP will then be submitted in Arkansas and Oklahoma based on the three-year submission cycles in those states. As required by the Commission’s Electric Utility Resource Planning Rule (Chapter 22), a full compliance filing is made every three years, and an IRP annual update is prepared and filed in all other years. Liberty-Empire last filed a Missouri IRP Annual Update in 2021 and filed its most recent Missouri triennial IRP in 2019.

The IRP process results in a target list of future resources designed to serve Liberty-Empire’s projected customer needs. The IRP requires the utility to select a preferred resource plan and develop a resource acquisition strategy. The IRP is a plan, but aspects of the plan mature to projects that become a part of Liberty-Empire’s future investment plans. The timing of this PISA report, which is filed in the state of Missouri by February 28, 2022, precedes the filing of the 2022 IRP by approximately one month. Additionally, once the 2022 IRP is filed, stakeholders will have the ability to review the filing and provide comments. Liberty-Empire and the stakeholder group will then work to resolve any identified deficiencies or concerns before making a joint filing with the Commission.

Liberty-Empire is still finalizing the 2022 IRP analysis. **By necessity, this PISA report does not include any updates that may result from this IRP study or subsequent resolutions.**

CTP Investment Summary

Liberty-Empire’s 2022 investment summary consists of approximately \$1.1B over the next five years across 12 categories of investment. These investments represent Liberty-Empire’s long-term planning estimates of expected capital investment on the electric infrastructure for Liberty-Empire in the Central Region. This infrastructure is predominantly located in Missouri, serving Missouri residents; however, for Liberty-Empire, the Central Region also operates electric infrastructure and serves electric customers in Kansas, Oklahoma, and Arkansas. The CTP addresses electric infrastructure for Liberty-Empire’s entire Central Region, not just for the state of Missouri.

Liberty-Empire Central (Empire) Retail Electric	
Missouri	160,517
Kansas	9,767
Arkansas	5,241
Oklahoma	4,771
TOTAL	180,296
<i>(as of December 31, 2021)</i>	

This report addresses Liberty-Empire’s current plan and estimates for investment in identified projects across these 12 strategic areas to modernize its electric infrastructure. Annually, project and program owners submit progression status and six-year forward-looking budget estimates for evaluation and approval into Liberty-Empire’s full capital investment plan. The results of this year’s approved version are detailed in the table below. Each year, Liberty-Empire will continue to evaluate, adjust, and report this five-year investment plan. As noted, Liberty-Empire continuously evaluates and analyzes the needs of its customers and the electric infrastructure, with budget priorities and plans shifting based on evolving needs and technology.

2022 Liberty Capital Investment Plan

\$ Millions

Program Name	2022	2023	2024	2025	2026	Total
Solar	\$0.0	\$1.2	\$3.0	\$4.3	\$131.8	\$140.4
Solar+Storage ¹	\$0.1	\$27.3	\$30.8	\$0.0	\$0.0	\$58.2
Plant Emissions**	\$0.2	\$0.2	\$0.1	\$2.6	\$0.5	\$3.5
Customer First* ¹	\$11.0	\$115.6	\$0.0	\$0.0	\$0.0	\$126.6
Energy Efficiency ¹	\$1.7	\$2.2	\$2.4	\$2.4	\$1.2	\$9.9
Transportation Electrification ¹	\$3.6	\$1.9	\$1.7	\$2.1	\$2.2	\$11.4
Cyber & Technology Upgrades ¹	\$5.9	\$4.3	\$2.9	\$2.0	\$0.7	\$15.8
Distribution Automation ¹	\$4.0	\$19.4	\$22.3	\$19.9	\$18.9	\$84.5
Grid Resiliency - Distribution ¹	\$91.9	\$93.7	\$93.1	\$64.5	\$73.3	\$416.5
Grid Resiliency - Transmission	\$46.6	\$52.1	\$18.3	\$18.6	\$5.5	\$141.0
Substation Security & Reliability	\$13.1	\$15.2	\$4.1	\$0.0	\$0.0	\$32.3
Generation Optimization	\$17.4	\$15.5	\$15.9	\$18.1	\$13.3	\$80.2
Total	\$195.5	\$348.4	\$194.6	\$134.5	\$247.3	\$1,120.3
Grid Modernization Subtotal	\$131.3	\$279.4	\$157.3	\$90.9	\$96.2	\$755.2
Grid Mod Percentage (%)	67%	80%	81%	68%	39%	67%

This reported investment plan reflects Liberty-Empire's full budget, not just focused on PISA-eligible spend.

** The Customer First program is a Liberty-wide initiative. Liberty-Empire's portion of cost will be allocated in 2022 & 2023.*

*** Planned costs for retirement projects are not included in this report and investment plan summary.*

¹ Included in the Grid Modernization subtotal.

The CTP is centered around investments in grid modernization that increase the use of digital information, optimize operations, automate and improve the flexibility of the grid, facilitate integration of distributed renewable generation, improve power quality, increase security and safety of the grid, and increase the grid's resiliency to withstand threats from vegetation and damaging winds and other weather events. The PISA statute requires that at least 25% of each year's investment be for grid modernization projects. As shown in the table above, this level is easily achieved in all years presented.

Investments in resiliency represent a major portion of Liberty-Empire's investment plans and follow examples set by progressive peers in the industry. It is crucial to our communities that our infrastructure continue to perform even under extenuating circumstances and extreme weather events.

The following sections will expand upon and summarize the three main pillars of the CTP:

1. Improving Access to Clean Energy
 - Wind generation, Solar Generation, Solar Plus Storage, and Plant Emissions
2. Modernizing the Customer Experience

- Customer First, Energy Efficiency, Transportation Electrification, and Cyber & Technology

3. Increasing Safety and Reliability

- Distribution Automation, Grid Resiliency – Distribution, Grid Resiliency – Transmission, Substation Security and Reliability, and Generation Optimization

Improving Access to Clean Energy

Liberty-Empire is committed to transitioning the electricity delivered to customers toward sustainable renewable resources. Over the next five years, Liberty-Empire will complete the decommissioning of the Asbury coal plant (Asbury was de-designated from the SPP market as of the end of March 1, 2020, after nearly 50 years of service) and add more affordable and more sustainable renewable generation. This will significantly reduce net carbon emissions and secure cost stability for Liberty-Empire and its customers. As previously noted, the 2022 IRP may provide an updated preferred resource plan.

New Wind Generation in Service

Approximately 600 megawatts of wind generation capacity were added to Liberty-Empire's power supply portfolio in 2021 across three wind farms, two of which are in Missouri (approximately 300 megawatts combined) and one in Kansas (approximately 300 megawatts).

The North Fork Ridge wind farm has a generating capacity of approximately 150 megawatts and is located in Barton County, just north of Nashville, Missouri.

The Kings Point wind farm has a generating capacity of approximately 150 megawatts and is in an area spanning portions of Dade, Jasper, and Lawrence Counties, southwest of Greenfield, Missouri.

The Neosho Ridge wind farm has a generating capacity of approximately 300 megawatts and is in Neosho County, just east of Altoona, Kansas and south of Chanute, Kansas.

Solar Generation (Photovoltaic)

Approximately sixty megawatts of solar generation (consisting of photovoltaic panels) will be deployed and connected to Liberty-Empire's grid over the next five years.

Ten megawatts of that capacity are planned to be allocated as community solar facilities. Community solar is unique, in that it is sold as a voluntary option to interested customers as dedicated renewable supply to offset their individual consumption. These customers participate through a simple and convenient billing mechanism, so they gain the benefits of solar energy supply without needing to install a dedicated system on their own roof or facility. However, at this time, the budget shown above does not include this amount of investment, due to the structure of the tariff offsetting the investment costs with block charges to the subscribers. The tariff also requires a full subscription before a certificate of convenience and necessity (CCN) may be effective. At this time that subscription base is not filled. For these reasons, the investments are not shown in the PISA plan above.

Liberty-Empire plans to build approximately five community solar facilities starting with the Prosperity Community Solar installation that is already in operation. This facility is located on approximately 15 acres of land near Prosperity, MO, and has a capacity of approximately 2.25 megawatts, consisting of more than 5,500 bifacial photovoltaic panels.

Liberty-Empire is also establishing approximately fifty megawatts of utility-scale solar facilities as part of its core energy supply fleet. The exact timing, locations and scale of these facilities are currently under evaluation. Changes to the timing of these facilities is due in part to the recent changes in Income Tax Credit policies related to the COVID-19 pandemic. Further, as previously noted, the Company's 2022 IRP will further assess these projects.

Solar plus Storage

In addition to larger utility-scale solar generation facilities, Liberty-Empire will strategically deploy approximately twenty megawatts of smaller distributed solar

generation facilities with integrated energy storage capacity across its electric grid to provide renewable power supply and simultaneously mitigate delivery congestion, constraints, or power quality issues. Liberty plans to further refine these projects and present the findings in a CCN docket. The exact locations and scale of facilities is currently under evaluation.

Plant Emissions

Liberty-Empire will continue to prudently invest in maintenance and optimization of its operating fossil fuel plants to ensure they perform reliably, run optimally, and emit as few pollutants as possible during their remaining operational life. Note: Liberty-Empire's only remaining coal generation is from jointly owned facilities.

Projects include upgrades to generation units and their control systems that improve heat rate (net efficiency of conversion from fuel to electricity) and increase net power output capacity. Other projects consist of proactively replacing aged equipment that are at higher risk of failure to ensure reliable operations.

Though not included in this investment plan summary, Liberty-Empire will continue the closure and decommissioning of the Asbury coal plant and other fossil fuel plants as they age out and the fleet transitions to renewable sources.

For more details on Liberty-Empire's long-term generation supply plans in Liberty's Central Region, please refer to Liberty-Empire's most recent Integrated Resource Plan (IRP) and annual updates filed with the Commission. As noted, the next triennial IRP is expected to be filed in Missouri in April, 2022.

Modernizing the Customer Experience

Electric consumers are evolving, and Liberty-Empire is responding. As preference trends shift to greater energy efficiency and decarbonization, Liberty-Empire is preparing its operations, customer programs, and digital infrastructure to meet these shifts in a secure and safe manner.

Customer First

The Customer First Program is a comprehensive digitalization initiative that will provide employees with the tools to deliver the experience our customers demand and deserve. It will create greater consistency around Finance, Customer Service, and Operations, resulting in an industry-leading customer experience. These projects will create the foundation to support Liberty-Empire's sustainability objectives through a fully integrated system with agile processes to support future growth.

Due to the organization's recent growth, Liberty as a whole has many unconnected business applications that were not designed to communicate. Customer First will be a series of six pillar projects for the entire organization that will provide a common means to address emerging business demands. It will consist of modern and connected platforms to meet customer, employee and other stakeholder needs.

The Customer First Foundations project impacts virtually every aspect of how Liberty-Empire runs its business. It will implement modern Enterprise Resource Planning (ERP) and associated tools.

Employee Central will modernize how Liberty-Empire manages employee data, recruiting, and onboarding to ensure Liberty-Empire builds and maintains a strong team to support its operations and its customers.



Procure-to-Pay will upgrade the tools and processes used to procure services and facilities on behalf of its infrastructure and customers.

Network & Design Operations will implement a uniform Geospatial Information System (“GIS”) technology across Liberty, for consistency of asset data management and analytics to support many other business and operational objectives, including the implementation of Advanced Distribution Management System (“ADMS”) that will improve the integration and utilization of smart devices, sensors, automation, and operational optimization across its grid infrastructure.

eCustomer will upgrade the customer service and customer data systems to improve how Liberty-Empire manages, protects, and shares its customer data to provide better customer service and offer more advanced information and choice to its customers.

Advanced Metering has deployed AMI with Next Generation (smart) meters to nearly all of Liberty-Empire’s customers. These smart meters measure energy consumption in more granular fifteen-minute intervals, enable Liberty-Empire to offer new advanced rate options, gain better insight into how customer use electricity to improve analysis and load forecasting, and provide these detailed energy consumption data and insights back to customers so they may better manage their energy usage and associated bills. Liberty-Empire’s AMI project reached substantial completion in 2021.

Energy Efficiency

To help its customers and communities use less energy and spend less money on energy, Liberty-Empire is continuing and expanding its energy efficiency programs.









Liberty-Empire plans to deploy new energy efficient LED streetlights and LED private lighting across the roadways and parking lots within its service territory as supplies become available. These new LED lights will replace old inefficient lights that are also prone to failure, leading to lower lifecycle costs to energize and maintain the thousands of street and private lights that Liberty-Empire is responsible for. LED lights also provide higher output and quality of light resulting in a safer driving, parking, and pedestrian environment. These projects will replace numerous

mercury vapor lights currently in operation in accordance with EPA objectives, doing a part to help protect the environment.

In addition, pursuant to Commission Rule 20 CSR 4240-4.017, Liberty-Empire filed an application to implement robust and mutually beneficial energy efficiency offerings under the framework prescribed by the Missouri Energy Efficiency Investment Act (“MEEIA”) in September 2021 in Commission File No. EO-2022-0078. The Commission approved the application on December 15, 2021, and the tariffs for these programs are approved through December 31, 2022. This 2022 MEEIA portfolio (known as MEEIA Cycle 1) continues and expands on popular programs from previous energy efficiency offerings and introduces four new customer programs.

Transportation Electrification

Decarbonizing transportation through electrification contributes to safer and healthier communities. Liberty-Empire is supporting this objective through a diverse portfolio of projects and programs that enable transportation electrification equitably across its service territory through education, charging infrastructure, financial incentives, and hands-on support with customers as they transition their fleets and specific equipment to electric. In January 2022, a Liberty-Empire Transportation Electrification (TE) pilot comprised of utility-administered EV charging programs for different types of electric customers was approved by the Commission (File No. ET-2020-0390).

On-Road Programs	
	Residential Smart Charge Program Subscription service with TOU rate and utility-owned smart charger
	Ready Charge Program Deployment of utility-owned L2 and DCFC public chargers
	Commercial Electrification Program Deployment of smart L2 chargers for fleets and workplaces
	School Bus Electrification Program Deployment of utility-owned L2 and DCFC chargers for local school buses
	Fleet Advisory Assistance and guidance to fleet owners
	Administration, Education & Analytics
Non-Road Programs	
	Non-Road Customer Incentives Rebates and incentives to adopt electric equipment for process and operations
	Non-Road Program Delivery Deployment of utility-owned L2 and DCFC public chargers

Aside from supporting the development of EV infrastructure in Liberty-Empire's service territory, the TE pilot program will enable the company to gather insights in a number of areas that will enhance its long-term planning capabilities, including:

- The extent (if any) of accelerated strain to adjacent assets brought about by EV charging (and especially Direct Current chargers);
- Technical and operating parameters of potential Vehicle-to-Grid and EV-specific Demand Response (DR) schemes;
- The demand elasticity of EV charging in response to the Time of Use rate schedules approved by the program;
- The customer journey insights, including the real and perceived barriers of customer EV adoption in Liberty-Empire's service territory;
- The suitability of charger equipped consumption measurement devices for the purposes of utility customer billing.

In addition to these Transportation Electrification programs for customers, Liberty-Empire is also striving to decarbonize emissions from its own fleet.

Cyber & Technology

In coordination with application, system, and integration upgrades associated with the Customer First program, Liberty-Empire is upgrading parts of its digital infrastructure, cyber security, data governance, and analytics. This involves investments in computer, server, and network upgrades to support user access and bandwidth. It also includes investments in safe and secure cloud strategies that facilitate collaboration and increase data utilization without exposing sensitive information or critical systems. New digital architectures will be established with accompanying governance strategies and procedural documentation. Liberty-Empire's customers will benefit from enhanced yet secure utilization of operational and customer data to improve operational efficiency of utility employees, proactively identify and resolve issues before they lead to disruptions, and increased utilization of utility infrastructure.

Increasing Safety and Reliability

Customers consistently point to safety and reliability as top priorities, and Liberty-Empire is committed to operating and maintaining its grid infrastructure in a safe and reliable manner on behalf of the communities served. This involves several areas of Advanced Transmission and Distribution Network Technology (“ATDNT”) investment that will support its customers. Not all these improvements will be readily visible to customers, nor are they limited to the installation of physical assets or devices, but they will benefit customers, nonetheless.

Distribution Automation

ATDNT plans, for example, will lead to more grid self-healing through distribution automation, expanded and improved communication to substations and field devices, and improvements to day-to-day engineering functions due to improved circuit models and maps. Liberty-Empire’s distribution automation investments will improve system reliability through coordinated deployment of smart protective devices like reclosers and smart fuses across the distribution grid. These devices, and others like smart capacitor banks and smart voltage regulators that can record and communicate with other devices and the ADMS, will enhance energy efficiencies and power quality on the distribution system. In this way, the ATDNT aspirations are best viewed from a systems point of view, involving by necessity field-located hardware, communications, integrated back office systems, and process improvements that apply the new functional capabilities of distribution automation.

Grid Resiliency - Distribution

New standards for design and construction of Liberty-Empire’s electric distribution system will be applied through a series of projects and through the recurring process of constructing new or replacing old facilities to accomplish a stronger and more resilient infrastructure.

Liberty-Empire has evaluated and approved numerous projects to improve the resiliency of its electrical infrastructure and accounted for in the CTP. Notable projects include:

- Replacement and upgrade of distribution circuit breakers.
- Replace and upgrade critical aged assets and equipment prone to failure.
- Strategically underground problematic sections of overhead cable systems.
- Build new substations to accommodate redundancy and load growth.
- Convert portions of the Joplin, Missouri distribution from 4kV to 12kV.
 - This project reconfigures the downtown Joplin distribution system to operate at our Company standard voltage of 12.47kV while rebuilding three substations. It is scheduled for completion in mid-2022.
- Install and upgrade animal guards on distribution and substation equipment.
- Relocate “through the woods” overhead segments to roadside.
- Increase capacity and resiliency of lines serving remote communities.
- Systematically inspect, treat and replace old underground cable as needed.
- Upgrades to service center facilities and equipment inventories.

These projects, among others, will increase the resiliency of distribution infrastructure to withstand threats from vegetation and extreme weather, increase load-carrying capacity to accommodate evolving customer loads and two-way power flows, and reduce the average age of distribution assets reducing risk and frequency of failure.

As emerging technologies present opportunities to approach existing problems in new ways, Liberty seeks to add them to its planning toolbox. One such opportunity stems from potential deployment of microgrid installations in strategic locations on its distribution systems, where doing so can help pace infrastructure renewal investments, augment conventional reliability and resiliency solutions, reduce losses, and deliver other benefits. Liberty-Empire is currently exploring the potential use cases with the ultimate goal of incorporating non-wire alternatives exploration into its general distribution planning process.

Grid Resiliency - Transmission

Like Distribution Resiliency, projects and investments on Liberty-Empire’s transmission infrastructure will improve system resilience through strategic

upgrades and rebuilding of core facilities such as high voltage transmission lines and associated substations.

Notable Transmission Resiliency projects include:

- Addition and upgrade of 69kV and 161kV breakers.
- Upgrade and expansion of SCADA to Liberty-Empire's substations.
- Replace and upgrade aged transmission structures.
- Replace and upgrade critical transmission lines delivering electricity to Joplin, Missouri, and other load concentrations across Liberty-Empire's service territory.

These projects will increase the resiliency and flexibility of transmission infrastructure to accomplish system redundancy for continued service through equipment failures or other disruptions and implement more robust structures to withstand threats from vegetation and weather.

Substation Security and Reliability

Liberty-Empire's Substation Security and Reliability plan is expected to go beyond better fencing. With the possibility of lethal consequences and exposure to liability, security for high-voltage equipment is more than protecting the grid and its continued operation. With substations located in both heavily populated and remote areas, having a comprehensive Substation Security and Reliability plan is important. Liberty-Empire devised a methodical and comprehensive standard that will ensure customer lights stay on with lowered risk to the health and safety of its employees, bystanders, thieves, and the surrounding communities.

Liberty-Empire is countering this risk through enhancements to the physical security measures of its substations through Project Guardian under the Substation Security and Reliability program. Project Guardian started construction in late-2021, improving the physical security of our highest-tiered substations, and the first stage is expected to be complete in 2022. The standards created under Project Guardian will be incorporated into our substations going forward based upon the tiering score of each particular substation. The electronic monitoring, remote access controls, and reliability enhancing programs will be developed over

the coming years. These enhancements are anticipated to include the introduction of remote monitoring through video cameras and other sensors, access card readers, and various types of equipment monitoring for reliability improvements. Access controls will also be upgraded to limit access to only authorized personnel and to track access accurately. In doing so, limiting access to substation infrastructure will reduce the risk of impacts to service from intentional and unintentional threats. Enhanced monitoring and access control will also improve safety of Liberty-Empire field employees and others by restricting access to only those who have received proper training and authorization.

Generation Optimization

In today's eco-friendly world, the utility space is under pressure to optimize the safety, utilization, and operational efficiency of all their assets and equipment. This is especially true for existing coal and natural gas plants that will continue to operate through the transition to renewable power sources. Liberty-Empire is prudently investing to optimize its existing generation facilities with focus on failure risk, reliable and responsive operation, and fuel conversion efficiency.

These optimization and continuous improvement projects vary in size and scope ensuring plant safety as a top priority, economic sustainability, and operational reliability. These projects involve upgrades that include comprehensive control system replacement, combustion turbine (CT) rotor upgrades, insulation enhancement, access platform upgrades, valve upgrades, pump upgrades, drainage improvements, plant automation augmented with tools that will help standardize operational decisions, LED lighting, labor saving tools, water saving upgrades, and more. With the implementation of these projects, Liberty-Empire will be able to offer greater longer-term value to its customers through sustained operations of these plants until they are replaced by renewable generation alternatives in a cost-effective manner.

Notable Accomplishments and Changes to the Investment Plan

As a comparison with the 2021 PISA Investment Plan, the following sections highlight notable accomplishments and changes.

Notable Accomplishments

The following accomplishments were realized over the past year:

- Three new wind resources began commercial operation in 2021. The Company purchased the North Fork Ridge wind project on January 27, 2021, and purchased the Kings Point and Neosho Ridge projects on May 5, 2021. All three wind projects are currently in operation and in service.
- Liberty-Empire completed the installation of Advance Metering Infrastructure (AMI) across the Central Region. The system is in operation and in service.
- Liberty-Empire began implementation of Project Guardian under the Substation Security and Reliability program. This portion of Project Guardian consisted of the installation of high-security fencing at our highest-ranked substations based upon the tiering criteria established and is expected to be complete in 2022.
- The Company installed electric vehicle (EV) direct current fast chargers (DCFC) –the first of their kind in the Joplin, Missouri area– at a local travel center at the intersection of major interstate highways (I-44 and I-49). These fast chargers support EV drivers traveling in and through the region and can be used by any plug-in EV that is capable of using a DC fast charger. Liberty-Empire partnered with the Missouri Department of Natural Resources Air Pollution Control Program, which provided funds from the Volkswagen Trust Awards to help pay for the installation. This charging location also helps meet the goal of creating a minimum practical highway travel network in Missouri.
- Continued investments in the Grid Resiliency for the Company's Distribution and Transmission Systems through system voltage conversions, substation

improvements, transmission and distribution line rebuilds, new distribution lines to remove radial feeds and various other types of projects.

- Liberty-Empire successfully launched a MEEIA energy efficiency portfolio. MEEIA Cycle 1 represents a significant increase to the breadth and diversity of the energy efficiency offerings and represents an increased commitment to energy efficiency that the Company expects to grow.
- The Company installed animal guards on approximately 5,500 transformers and began the systematic inspection, treatment, and replacement of underground conductors as appropriate.

Changes to the Investment Plan for 2022

This year's five-year investment plan, covering the period 2022-2026, is approximately \$890 million lower than last year's plan which covered the period 2021-2025. Comparing the common period of 2022-2025, this year's plan is about \$202 million lower than the same period last year. Aside from advancing one year into the future, key contributors to this difference are listed below:

- Planned investments associated with retirement projects are not included in this investment summary. Most notable being the retirement and decommissioning of the Asbury coal plant.
- The planned timing of investment in Solar generation capacity and Solar + Storage has been shifted out to later years in response to the extension of Investment Tax Credit (ITC) policies, supply chain disruptions, and commodity pricing. The Company's triennial IRP will further assess these projects.
- Network & Design Operations portion of the Customer First initiative has been split out and is expected to be realized in 2022 (GIS + AMDS).
- Substation Security & Reliability investment plans decreased due to a shift in strategy to focus on physical security and defer reliability and monitoring technologies.

- Distribution Automation installations were delayed to 2022. Many investments were expected to begin in 2021, but the needed equipment and products will not be available until the second quarter of 2022 at the earliest. These products continue to be impacted by the supply chain disruptions following the COVID-19 pandemic.
- The investment in energy efficient LED Streetlights has been slowed due to material supply chain issues. As limited supplies allow, some new LED lights will be installed to repair failed lights or meet specific customer requests.

CTP Investment Summary and Conclusion

As detailed above, Liberty-Empire's 2022 investment plan consists of approximately \$1.1B over the next five years, across 12 strategic investment areas to modernize the Company's electric infrastructure (see table on page five). These investments represent Liberty-Empire's long-term planning estimates of expected capital investment on the electric infrastructure for Liberty's Central Region. This infrastructure is predominantly located in Missouri, serving Missouri residents; however, Liberty-Empire also operates electric infrastructure and serves electric customers in Kansas, Oklahoma, and Arkansas. The CTP and this investment plan address all electric infrastructure for the Central Region, not just for the state of Missouri.

Bringing about improved customer solutions through cost management, modern technologies, and a transition to clean energy, the CTP will enable the Company's electric grid to meet evolving customer needs today and in the future.

The CTP is centered around investments in grid modernization that increase the use of digital information, optimize operations, automate and improve the flexibility of the grid, facilitate integration of distributed renewable generation, improve power quality, increase security and safety of the grid, and increase the grid's resiliency to withstand threats from vegetation and damaging winds and other weather events. For the 2022 budget, grid modernization projects, within the meaning of RSMo. 393.1400 and the minimum 25 percent requirement, constitute

approximately 67 percent of planned capital expenditures. Investments in resiliency represent a major portion of Liberty-Empire's CTP, as it is crucial to our communities that our infrastructure continue to perform even under extenuating circumstances and extreme weather events.

The investment plan detailed in this report represents Liberty-Empire's current plan and estimates for investment in the identified projects. As noted, some of the plans related to new generation resources may change as a result of the Company's new 2022 IRP which is currently being developed and planned to be filed in Missouri in April, 2022. Additionally, emerging challenges with supply chain disruptions could impact portions of this investment plan. Liberty-Empire continuously evaluates and analyzes the needs of its customers and the electric grid, the condition of the Company's infrastructure, the costs and accessibility of modern technologies, and strives to be responsive and forward-looking. Additionally, project and program owners annually submit progression status and six-year forward-looking budget estimates for evaluation and approval into Liberty-Empire's full capital investment plan. The results of this year's approved version are detailed in this report. Each year, pursuant to RSMo. 393.1400, Liberty-Empire will continue to evaluate, adjust, and report this five-year investment plan.