2024 PISA Annual Report

Update on the Company's Clean Transition Plan

The Empire District Electric Company
d/b/a Liberty

February 28, 2024

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Introduction

This report satisfies the 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" or the "Company"). This is the 2024 PISA Annual Report which provides an update on the Company's Clean Transition Plan (the "CTP") and updates the past PISA reports filed in 2021 through 2023 in Missouri Public Service Commission ("Commission") File No. EO-2019-0046. The CTP will enable Liberty's electric grid to meet evolving customer needs today and in the future through cost management, modern technologies, and a transition to clean energy.

This report reflects a snapshot in time of Liberty's intentions regarding budget plans for the next five years to continue the progress of Liberty's CTP. Organizational priorities and plans are prone to shift based on evolving needs, technology, supply chain issues, and the economic landscape, resulting in adjustments to the reported budget and spending forecast.

- Liberty continuously evaluates and analyzes the needs of its customers and the electric grid, the condition of Liberty's infrastructure, the costs and accessibility of modern technologies, and the availability of new technologies.
- Liberty 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.
- Liberty will continue to be active and dedicated partners to the customers we serve. Our CTP and other planned initiatives will enhance reliability and safety and help save our customers money over other alternatives. Our investments strike a balance between affordability and service quality.
- As mentioned, plans are always being re-evaluated and are subject to change. For example, the Company submitted a Missouri triennial integrated resource plan ("IRP") in April 2022, and an IRP Annual Update in 2023. The next IRP Annual Update is due to be filed in Missouri in the March-April 2024 timeframe. The IRP process, which often leads to requests for proposals ("RFPs") following the IRP, can impact future projects (see the section "The Integrated Resource Plan (IRP)" presented below).

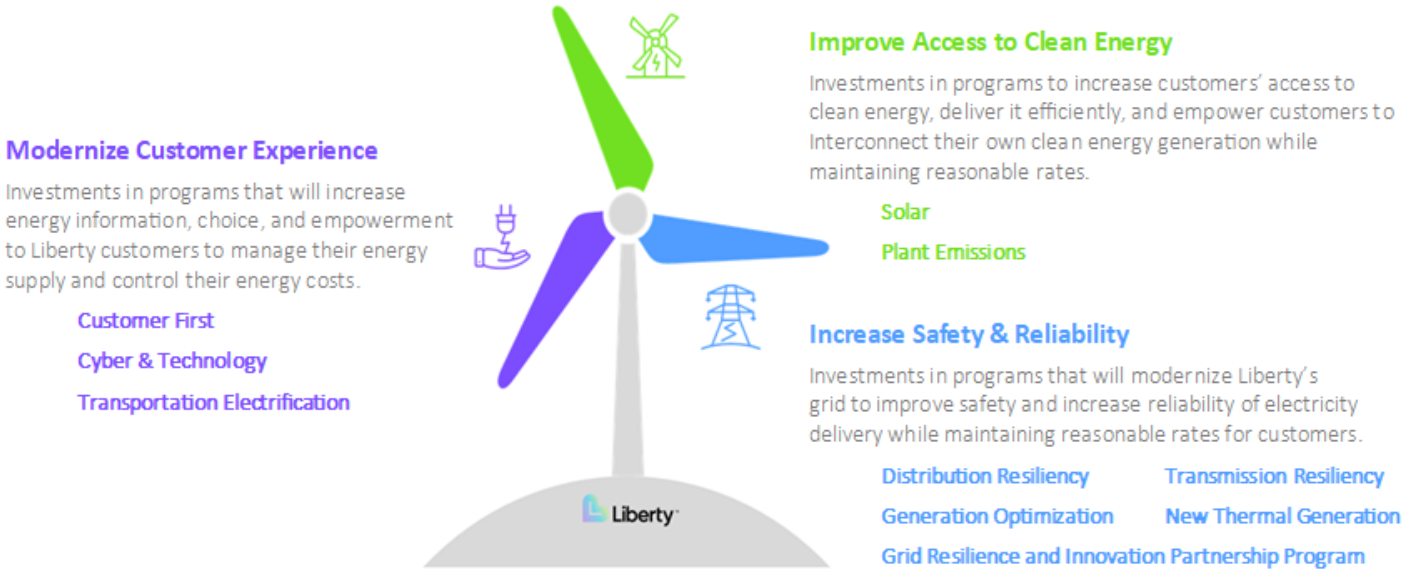
Liberty's Clean Transition Plan

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

Liberty is focusing capital investment on its electric infrastructure in the Central Region (Missouri, Kansas, Arkansas, and Oklahoma).

The CTP embodies Liberty's organizational priorities to provide industry leadership in sustainability and our pursuit of operational excellence. The CTP invests in technologies, infrastructure, and the development of customer programs to transition Liberty's electrical infrastructure and operations to meet evolving customer needs. Investments are focused on three key areas of transition:

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



PISA Agreements from Past Cases

The stipulation and agreement in Commission File No. ER-2021-0312 states that Liberty "will meet with Staff and OPC at least twice regarding 'parameters and assumptions' and will provide… cost-benefit analyses and performance metrics for planned capital investments of greater than $1 million." Additionally, these metrics and analyses will be updated annually and filed in the Company's PISA docket. Liberty held its initial meeting with Commission Staff ("Staff") and Office of the Public Counsel ("OPC") on September 27, 2022, and a second meeting was held on February 24, 2023.

As communicated in last year's PISA Report, cost-benefit analyses ("CBA") and performance metrics for investments that meet the $1 million threshold are planned to first be included in Liberty's PISA docket in February 2025. The Company is progressing towards this target and is currently approaching the end of a first phase of a project to deploy a planning decision support tool that it will initially use to inform and facilitate the CBA work for transmission and distribution projects. The decision support tool in question

was discussed with Staff and OPC in February of 2023. The remainder of 2024 will be dedicated to configuring the tool, developing, or augmenting the relevant supporting processes, and stress-testing the associated assumptions and outputs. Further tool updates and upgrades are expected to be required to incorporate incremental asset health and demographics data collected in the coming years, and to make use of the outputs of the ongoing Value of Lost Load ("VOLL") study, following its planned completion in 2025.

Separately from the settlement commitments, based on the statute, for each project in the specific capital investment plan on which construction commences on or after January 1st of the year in which the plan is submitted (in this case 2024), and where the cost of the project is estimated to exceed $20 million, a cost benefit statement will be provided as Exhibit 3 within the Company's PISA docket.

2023 Actual Capital Expenditures

As required by statute, Liberty is submitting Exhibit 1, a detailed account of actual capital investments made in 2023.

Additionally, Liberty is providing, as required by statute, "the quantitatively evaluated benefits and costs generated by each of those investments that exceeded $20 million, and any efficiencies achieved as a result of those investments." The three projects that met the $20 million threshold and went into service in 2023 are included in Exhibit 2.

The Integrated Resource Plan ("IRP")

Liberty filed its most recent triennial IRP in Missouri on April 1, 2022. This IRP was then submitted in Arkansas in July 2022, and in Oklahoma in June 2023 based on a three-year submission cycle. As required by the Missouri 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. Following the most recent triennial filing in 2022, the Company filed an IRP Annual Update in March 2023 and plans to file the next IRP Annual Update in Missouri in late March or early April 2024.

The IRP process results in a target list of resource candidates to serve Liberty's future customer needs. The IRP enables the utility to develop a preferred resource plan and initiate an acquisition strategy. The IRP is a plan, but it should be noted that not all aspects of the plan progress to projects that become a part of Liberty's future capital investment plans. This investment plan includes the next planned resource investment to meet growing customer needs or to replace aging units, such as the upcoming replacement of a portion of the Riverton generation facility now scheduled for the 2026 timeframe. Progress is being made on this project, and changes since the time of the 2022 IRP filing were outlined in the 2023 IRP Annual Update and will be discussed further herein.

Resource planning is a dynamic process. Since the Company filed the 2022 IRP, conditions in the electric industry continue to evolve. This includes changes to the Southwest Power Pool ("SPP") planning reserve margin, which increased from 12% to 15%; the introduction

of performance-based accreditation which will be implemented in the near future for traditional generating resources; updated estimates to Effective Load Carrying Capability ("ELCC") ratings for renewable resources which is planned to be implemented within SPP following FERC approval; and the passage of the Inflation Reduction Act ("IRA") to name just a few notable industry shifts. Liberty is also making progress on the Company's first utility scale solar project, projected to be operational in the 2027 timeframe. This project is included in the capital investment plan included in this PISA report. Any updates to this project will be outlined in the next IRP Annual Update report.

Liberty is still finalizing the 2024 IRP Annual Update report. This report is planned to be discussed at an IRP annual update workshop with stakeholders in the first or second quarters of 2024. The purpose of the annual update is to ensure that members of the Missouri stakeholder group have the opportunity to provide input and to stay informed regarding the evolving conditions since the last filed triennial compliance (IRP) filing or annual update filing.

CTP Investment Summary

Liberty's 2024 investment summary consists of approximately $1,528 million over the next five years across nine categories of investment. These investments represent Liberty's long-term planning estimates of expected capital investment on the electric infrastructure for Liberty in the Central Region. While this infrastructure is predominantly located in Missouri, serving Missouri residents, the Central Region also operates electric infrastructure and serves electric customers in Kansas, Arkansas, and Oklahoma. The CTP addresses electric infrastructure for Liberty's entire Central Region, not just for the state of Missouri.

Liberty-Empire Central (Empire) Retail Electric	
Missouri	165,361
Kansas	9,807
Arkansas	5,558
Oklahoma	4,841
Total	**185,567**
as of December 31, 2023	

This report addresses Liberty's current plan and estimates for investment in identified projects across these nine 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's full capital investment plan. The results of this year's approved version for 2024 through 2028 are detailed in the table below. Each year, Liberty will continue to evaluate, adjust, and report this five-year investment plan. As noted, Liberty continuously evaluates and analyzes the needs of its customers and the electric infrastructure, with budget priorities and plans shifting based on evolving needs and emerging technology.

2024 Liberty Capital Investment Plan *$ Millions*

Program Name	2024	2025	2026	2027	2028	Total
Solar	$0.5	$12.3	$7.7	$130.3	$0.0	$150.9
Plant Emissions*	$1.2	$0.2	$0.4	$0.2	$1.1	$3.1
Customer First [1]	$139.1	$0.0	$0.0	$0.0	$0.0	$139.1
Transportation Electrification [1]	$1.7	$2.1	$2.2	$1.1	$0.5	$7.5
Cyber & Technology Upgrades [1]	$14.0	$24.4	$22.1	$13.3	$12.4	$86.3
Grid Resiliency - Distribution [1]	$108.3	$127.7	$170.9	$145.1	$128.2	$680.2
Grid Resiliency - Transmission	$22.6	$53.5	$50.9	$68.5	$82.2	$277.7
Generation Optimization**	$30.7	$34.8	$35.9	$24.4	$15.7	$141.6
Total	$318.2	$255.1	$290.1	$382.8	$240.2	$1,486.4
New Thermal Generation	$15.0	$22.2	$4.2	$0.0	$0.0	$41.4
Total including New Thermal Gen	$333.2	$277.3	$294.3	$382.8	$240.2	$1,527.8
Grid Modernization Subtotal	$263.1	$154.2	$195.1	$159.5	$141.1	$913.1
Grid Mod Percentage (%)	83%	60%	67%	42%	59%	61%

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

AFUDC is not included in this report and investment plan summary.

* 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 grid modernization investments that optimize operations, automate, and improve the flexibility of the grid, facilitate integration of distributed renewable generation, improve power quality, and increase the use of digital information, the security and safety of the grid, and the grid' s resiliency to withstand threats from vegetation and damaging winds and other extreme weather events. The PISA statute specifies that at least 25% of each year's planned investment be for grid modernization projects. As shown in the table above, this level is easily achieved in all years presented. The table also includes a large "below the line" project. This important reliability addition of new thermal generation is not PISA eligible.

Investments in resiliency represent a major portion of Liberty'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.

Improving Access to Clean Energy

Liberty is committed to continuing to transition the electricity delivered to customers toward sustainable renewable resources. Over the next five years, Liberty will add more affordable and more sustainable renewable generation in the form of solar projects. This will continue to reduce net carbon emissions and secure cost stability for Liberty and its customers.

Solar Generation (Photovoltaic)

Approximately one hundred ten megawatts of solar generation (consisting of photovoltaic panels) are planned to be deployed and connected to Liberty's grid over the next five years.

Liberty's last triennial IRP planned construction of approximately one hundred five megawatts of utility-scale solar with integrated energy storage capacity as part of its core energy supply fleet. The exact timing and location of this facility is currently under evaluation. Changes to this project may result from the Inflation Reduction Act of 2022, specifically provisions of that law extending the solar investment tax credit. Any changes in the project resulting from changes in law will be reflected in the Company's 2024 IRP annual update as they are known at that time.

In addition to larger utility-scale solar generation facilities, Liberty plans to strategically deploy its first distributed solar generation facility not associated with our Community Solar Program. This facility will have a capacity of about five megawatts. The installation of distributed solar generation across the Company will provide renewable power and supply and simultaneously mitigate delivery congestion, constraints, or power quality issues. Liberty plans to further refine these projects and present the findings in a certificate of convenience and necessity ("CCN") docket. The exact locations and scale of the facilities are currently under evaluation.

Community Solar

Additional community solar capacity is expected to be installed during the next five years. The exact amount to be built will depend upon customer demand. 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. The tariff also requires a full subscription before additional CCNs may be effective. The Company has a substantial waitlist for customers expressing interest in community solar. Liberty's revised tariff sheets are effective, and a CCN application will likely be filed later this year.

Plant Emissions

Liberty will continue to prudently invest in the 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. It should be noted that Liberty's only remaining coal generation is from two 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.

For more details on Liberty's long-term generation supply plans in Liberty's Central Region, please refer to Liberty's current IRP and annual updates filed with the Commission. As noted, the most recent triennial IRP was filed in Missouri in April 2022 in File No. EO-2021-0331, and the most recent IRP Annual Update was filed in Missouri in March 2023 in File No. EO-2023-0294.

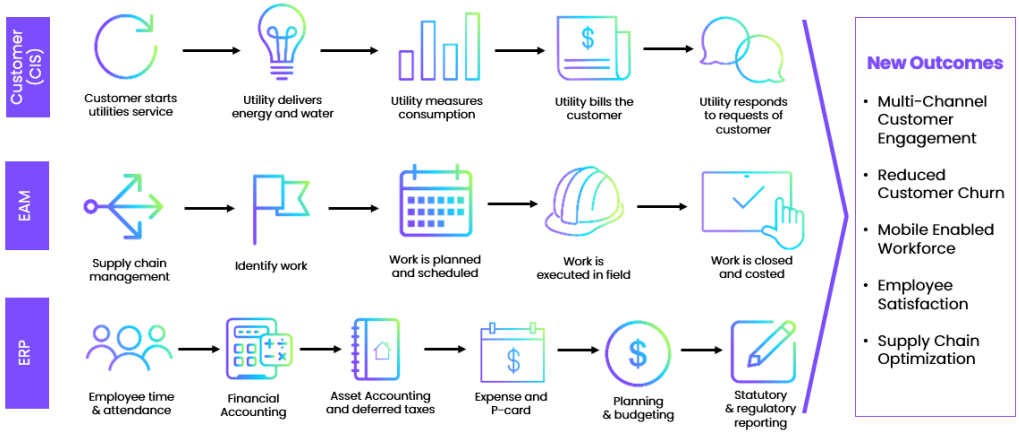
Modernizing the Customer Experience

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

Customer First

The Customer First Program is a comprehensive digitalization initiative that will transform the Liberty experience for our customers, employees, and business. At its core, Customer First is about ensuring our customers remain at the center of everything that we do. It provides our teams with new tools and enhanced capabilities necessary to deliver the experience that our customers demand and deserve - whether it is providing sustainable energy solutions or effortless customer interactions. 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's sustainability objectives through a fully integrated system with agile processes to support future growth.

The Customer First Foundations project, the final of Customer First's six pillars to be released, will impact virtually every aspect of how Liberty runs its business. By implementing standard best in class processes paired with a new suite of SAP tools and systems, Liberty will transform the way that work is done with over 14 industry-leading business systems that enable more efficient workflows and a seamless integrated environment. Changes to our business, our operations, and our customer experience 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.



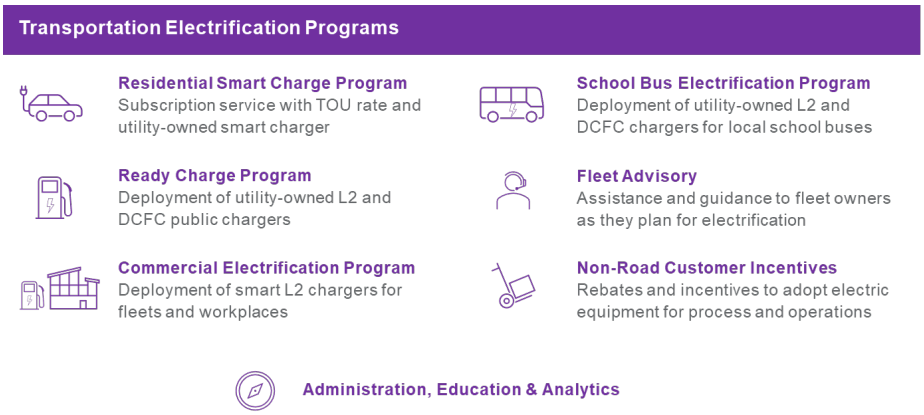
Customer First Foundations has been launched at several other Liberty Utilities Co. locations and is expected to make its final Customer First Foundations transition in the first half of 2024. Currently, Liberty employees are undergoing training to prepare for the final go live date and the Hypercare Support Team is available for questions and assistance.

Transportation Electrification

Decarbonizing transportation through electrification contributes to safer and healthier communities. Liberty 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 Transportation Electrification ("TE") pilot comprised of utility-administered electric vehicle ("EV") charging programs for different types of electric customers was approved by the Commission (File No. ET-2020-0390).

Aside from supporting the development of EV infrastructure in Liberty's service territory, the TE pilot program continues to enable the company to gather insights in multiple 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.
- Customer journey insights, including the real and perceived barriers of customer EV adoption in Liberty'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 continues to decarbonize emissions from its own fleet.

Cyber & Technology

In coordination with application, system, and integration upgrades associated with the Customer First program and other technologies, Liberty 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. Cybersecurity Program has embarked on a multi-year programmatic uplift of Liberty's cybersecurity readiness to adjust to the changes in the technology landscape and build internal capacity to respond to the growing threats targeting utility operations. Program's objectives and desired outcomes are mapped to the National Institute of Standards and Technology ("NIST") Cybersecurity Framework ("CSF") with a continuous on-going assessment to improve the program's outcomes and value. New digital architectures will be established with accompanying governance strategies and procedural documentation. Liberty's customers will experience improved and secure utilization of operational and customer data, leading to enhanced operational efficiency for utility personnel. This includes the proactive identification and resolution of issues before they lead to service disruptions, as well as optimized utilization of utility infrastructure.

Increasing Safety and Reliability

Customers consistently point to reliability and clean energy as top priorities, and Liberty is committed to operating and maintaining its grid infrastructure in a safe and reliable manner on behalf of the communities served. 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.

Grid Resiliency – Distribution

Liberty continually updates our philosophy for design and construction of Liberty's electric distribution system. Our grid resiliency design philosophy 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 has evaluated and approved numerous projects to improve the resiliency of its electrical infrastructure and accounted for in the CTP. Notable projects include:

- Replace and upgrade distribution circuit breakers.
- Replace and upgrade critical aged assets and equipment prone to failure.
- Build new substations to accommodate redundancy and load growth.
- Install and upgrade animal guards on distribution and substation equipment.
- 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.

Grid Resiliency – Transmission

Like Distribution Resiliency, projects and investments on Liberty's transmission infrastructure will improve system resilience through strategic upgrades and rebuilding of core facilities such as high-voltage transmission lines and associated substations. Some of the lines recently replaced by Liberty were over 90 years old.

Notable Transmission Resiliency projects include:

- Addition and upgrade of 69kV and 161kV breakers.
- Upgrade and expansion of SCADA to Liberty'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'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 extreme weather.

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 is prudently investing to optimize its existing generation facilities with focus on failure risk, reliable and responsive operation, and fuel conversion efficiency. With the recent passage of performance-based accreditation in the SPP and continued focus on weather related reliability standards from the North American Electric Reliability Corporation ("NERC"), investment in the reliable operation of its generation fleet to increase resiliency and stay in compliance with changing standards will be paramount.

These optimization and continuous improvement projects vary in size and scope ensuring plant safety as a top priority, while focusing on 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 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.

Grid Resilience and Innovation Partnerships Program

On October 18, 2023, the U.S. Department of Energy ("DOE") announced that Liberty was selected to receive up to $47.5 million in funding through the Grid Resilience and Innovation Partnerships Program ("GRIP") from the DOE's Grid Deployment Office. The funds will allow the Company to install or upgrade over 300 Distribution Automation ("DA") devices, while reconductoring and hardening over 30 miles of distribution lines and upgrading capacity at several distribution substations. An associated benefit of this program will be the ability to monitor the status and loading of the distribution system at over 300 new points, improving our ability to detect and respond to system disturbances. The DOE's support of the project means that Liberty's customers in Arkansas, Kansas, Missouri, and Oklahoma can benefit from improved service reliability, resilience, and added capacity to accommodate renewables, while experiencing rate impact that amounts to only half of the project's total estimated cost, provided that relevant Regulatory Commissions approve the associated investments in future rate filings. Aside from the service-related benefits, the projects are poised to contribute to local economy by creating direct and indirect jobs and facilitating skills advancement for line personnel.

At this time, the Company continues working with the DOE through an Award Negotiations process, which it expects to conclude during the second quarter of 2024. Liberty also notes that it has submitted a new Concept Paper for a transmission reinforcement project in Missouri as a part of the GRIP program's second tranche of awards.

New Thermal Generation

The Riverton 10 and 11 replacement project is in progress and part of the capital project plan. This thermal unit replacement project has an open CCN docket in Missouri (EA-2023-0131). The 2022 IRP preferred resource plan included the replacement of the aging Riverton Units 10 and 11 to enhance the resiliency of Liberty's electric supply. The original plan identified the addition of approximately 30 MW of reciprocating internal combustion engine ("RICE") generation using existing interconnection at the Riverton site with the retirements of Riverton Units 10 and 11. Following the 2022 IRP filing, Liberty worked with Black & Veatch ("B&V") on a technology review examining three models of RICE, six simple-cycle CT models, and batteries. These units were further evaluated in the 2023 IRP Annual Update process, where it was determined—with updated information—the Riverton Replacement project had a lower long run projected cost with the installation of two CT generators. This project has a projected commercial operation date in the second quarter of 2026. Each new CT unit will have a nominal net output of 13.3 MW. The turbines are

fast-starting and are dual fuel capable, providing resiliency for periods of natural gas scarcity and the capability to start when no off-site power is available. The two new turbines will have no post-combustion pollution controls but will employ dry low NOx combustion to limit NOx formation. The new units will be more efficient than the existing units, meaning they will consume approximately 37% less fuel per kWh generated than the units they will replace. Additionally, the CTs may provide a benefit for the potential of utilizing H2 as a blend fuel in the future

Notable Accomplishments and Changes to the Investment Plan

As a comparison with the 2023 PISA Annual Report, the subsequent sections highlight notable accomplishments and changes.

Notable Accomplishments

The following accomplishments were realized over the past year:

- The Company's Transportation Electrification programs had several notable accomplishments in 2023 including seeing an increase in public EV infrastructure utilization and third-party installations, implementation of cost management initiatives resulting in savings to our customers, providing an oasis in what have been "charging deserts" in our service area with the completion of Phase 1 Ready Charge installations, deployment of First Liberty charging stations for electric school buses, and continuing support of customers in their pursuit of available federal funding through programs such as Charging and Fueling Infrastructure Discretionary Grant Program ("CFI Program"), Volkswagen ("VW") Environmental Mitigation Trust, EPA Clean School Bus, and NEVI Grants.
- The Company's Cyber division had many significant achievements in 2023 including deployment of end user IT solutions to build foundational cybersecurity defenses and services across the enterprise – email security services, servers, mobile, firewall defenses etc. Additionally, the Company utilized enhanced security monitoring and threat detection capabilities to safeguard critical operations network. Furthermore, Liberty successfully implemented enhanced capabilities, aligning with industry benchmarks to achieve parity with peers of similar maturity.
- Liberty received approval of revised tariff sheets allowing for further adoption of the Company's Community Solar Subscription Plan. New facilities to be built under this Plan will require CCNs.
- A new Liberty substation was energized in the city of Greenfield, MO in 2023. This substation provides additional system capacity and switching capacity for the area. Additional work converting 4kV distribution facilities to 12kV leading to the substation is planned to be completed in Greenfield in 2024.
- The Company's Oakland North Substation #432 was energized in 2023 adding additional capacity to Joplin and Webb City industrial and residential areas. This substation provides redundant transformers to increase the switching ability of the

system to reduce extended outage and provide capacity for economic growth in the communities.

Changes to the Investment Plan for 2024

As compared to the Company's investment plan for 2023, the estimated capital investment for year 2024 (excluding new thermal generation) is higher by $140.1 million, or about 79%. Overall, this year's five-year investment plan not including new thermal generation, covering the period 2024-2028, is approximately $423.1 million higher than last year's plan which covered the period 2023-2027. Comparing the common period of 2024-2027 without new thermal generation, this year's plan is about $441.7 million or 55% higher than the same period last year. The base year, 2024, was impacted by:

- A shift in the timing and an increase in cost of the Customer First project.
- A new investment in community solar of approximately $15 million was added in 2024.
- New capital investments were added due to funds from the Infrastructure Investment and Jobs Act ("IIJA") becoming available.

CTP Investment Summary and Conclusion

As detailed above, Liberty's 2024 investment plan consists of approximately $1,528 million over the next five years, across nine strategic investment areas to modernize the Company's electric infrastructure (see table on page seven). These investments represent Liberty's long-term planning estimates of expected capital investment on the electric infrastructure for Liberty's Central Region. The CTP and this investment plan address all electric infrastructure for the Central Region, including Missouri, Kansas, Arkansas, and Oklahoma.

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 both today and in the future.

The CTP is centered around grid modernization investments that optimize operations, automate, and improve the flexibility of the grid, facilitate integration of distributed renewable generation, improve power quality, and increase the use of digital information, the security and safety of the grid, and the grid's resiliency to withstand threats from vegetation and damaging winds and other extreme weather events. For the 2024 budget, grid modernization projects, within the meaning of RSMo. 393.1400 and the minimum 25% requirement, constitute approximately 83% of planned capital expenditures. Investments in resiliency represent a major portion of Liberty's CTP, as it is crucial to our communities that our infrastructure continue to perform even under extenuating circumstances and extreme weather events. Additionally, the five-year plan includes new solar and thermal generation to enhance reliability, including replacement of units at the Riverton Generation Station as outlined in the IRP process.

2023 Actual Capital Expenditures (Dollars)

Expense Category		2023
Commercial Operations	$	132,991,966.05
General Services	$	5,352,969.52
Production	$	35,574,983.84
Wind	$	4,242,102.09
Total	**$**	**178,162,021.50**

* AFUDC is included in actual amounts

** Most large negative balances reflect transfers occurring within budget lines.

Commercial Operations

Funding Project	Description		2023 Actual Expenditures
DA0001	Regulators & Capacitors	$	135,183.48
DA0151	Build New 69/12kV Sub -Willard	$	3,068.70
DA0154	161/12kV Sub-Hollister Ind Pk	$	(53,541.27)
DA0155	Add Xfmr at Ozark Sub #434	$	50,954.67
DA0161	Build New 161kV Sub in Gentry	$	5,099,376.90
DA0620	Aging Equipment	$	(4,751,568.61)
DA0622	Sub 260 Aged Assets	$	4,568.60
DA0630	Substation Security	$	(52,931.50)
DA0640	SCADA Installation	$	502,484.24
DA0650	Wildlife Guards	$	146,953.95
DA0660	Underground Conductor	$	499,394.43
DA0680	Fleet Electric Charging Station	$	(206,659.80)
DA0691	TEPP Res. Smart Charge	$	14,234.02
DA0692	TEPP Ready Charge Program	$	369,614.83
DA0693	TEPP Com. Elec. Program	$	(0.01)
DA0694	TEPP School Bus Program	$	55,137.71
DISTRIBUTION ADDITIONS		$	1,816,270.34
DB0001	Extensions	$	35,536,288.13
DB0004	Street Lighting	$	2,666,037.65
DB0005	Distribution Transformers	$	3,233,847.05
DB0006	Customer's Meters	$	2,286,703.96
DB0007	Customer's Services	$	10,084,538.79
DB0008	Substation Blankets	$	372,064.61
DB0010	Misc Dist of OH Lines	$	7,992,140.77
DB0011	Misc Dist of UG Lines	$	1,504,662.73
DISTRIBUTION BLANKETS		$	63,676,283.69

DR0001	Relocate T&D for Hwy Changes	$	(893,590.99)
DR0002	Replace Bad Order Distr Poles	$	5,487,605.32
DR0004	Chg Jop Dist Voltage 4kv to 12	$	370,848.50
DR0006	Rebuild/Increase Cap-Joplin	$	1,814.45
DR0008	Distr. Reliability Improvement	$	591,651.38
DR0009	Misc Rebuilds/Add to Dist Subs	$	941,097.02
DR0010	Misc Rebuilds/Add - Dist Lines	$	468,398.46
DR0011	Replace UG Dist Cable-System	$	107.28
DR0012	Joint Use Line Rebuilds	$	510,182.91
DR0013	Purchase Power Transf & Brkrs	$	14,055,728.66
DR0020	Rebuild/Remove Equip Solar#315	$	2,313.30
DR0172	Repl Obsolete Series St Lgtg	$	80,214.96
DR0176	Replace SWG at Northpark Mall	$	275,797.68
DR0186	Repl Struct & 12kV Brkr Wan399	$	95,767.18
DR0188	Repl Struc T&D Heatonville#338	$	452,107.38
DR0190	Repl Wood Struct Humansvill308	$	(20,802.42)
DR0192	Repl Wood Struct Boston #249	$	136,844.67
DR0194	Replace Wood Struct Arcola#250	$	59,741.29
DR0196	Repl Bus,Switch,Breakers #312	$	497.57
DR0209	Rebuild/Increase Cap-Branson	$	60,348.75
DR0212	REBUILD/INC CAPACITY-BAXTER	$	(4,371.78)
DR0214	Rebuild/Increase Cap-Joplin	$	312.71
DR0220	Reconductor along Hines Street	$	(1,639.98)
DR0221	Reconductor Hwy 60 to Hines St	$	(2,217.78)
DR0230	Add Brkr & New Ckt SW City#414	$	41,020.17
DR0231	Rebuild 3-Phase Hwy B Granby	$	(264.25)
DR0232	Build/Recond 3-Phase Kodiak Rd	$	9,900.00
DR0236	Gravette Dist Line Recond	$	347.16
DR0237	Recond Circuit 3772 Load Grwth	$	(2.32)
DR0928	Install Distribution Reclosers	$	1,683.19
DR0931	Hallowell Reconductor	$	2,961.75
DISTRIBUTION REBUILDS		$	27,724,402.22
DS0001	Distribution Services Center	$	19,278.44
DS0130	Service Center Improv/Addition	$	(15,730.82)
DS0140	Other Additions/Improvements	$	(18,653.85)
DX	Excess Facilities	$	400,489.79
COMMERCIAL OPERATIONS FACILITIES		$	385,383.56
DISTRIBUTION TOTALS		$	88,602,339.81

GT0010	Purchase Misc Tools	$	38,003.03
GT0015	Purchase Fall Arrest Equipment	$	44,951.78
GT0070	Purchase Misc Equip	$	(5,499.52)
GT0075	Purchase Large Tools & Equip	$	111,356.99
GT0103	Purchase Test Equip	$	6,965.84
GENERAL TOOLS		$	195,778.12
STORM JOBS	Storm Outages	$	5,882,544.76
STORM JOBS		$	5,882,544.76
B00000	Billing Not Budgeted	$	(12,483.16)
OTHER COMM OPS		$	(12,483.16)
TA0236	Install ICON 20 Node - 2 Ring	$	119,116.92
TA0245	Install DFR at Sub 389 per PCR	$	277,936.68
TA0255	BD Health Substn & 69kV Insula	$	115,670.29
TA0923	Inst 2-69kV Brkrs #447 & #258	$	(527,775.33)
TA0925	Install 2-69kV Breakers at#322	$	(56,362.94)
TA0927	Install Distribution SCADA	$	5,653.97
TA0928	Install 2-161kV Breakers #421	$	6,427.05
TA0930	Install 2-69kV Breakers at #44	$	(1,168,743.65)
TA0936	Install 2 161kV Brkrs at #432	$	5,706,208.83
TA0937	Install 2-69kV Breakers at#251	$	9,022,166.57
TA0939	Inst2Way69kV MOAB TransSch 296	$	(496,269.49)
TA0941	Install Monett Switch Automatn	$	510,043.59
TA0947	Convert Exist 34.5 kV Collins	$	(1,675.00)
TA0950	Install SCADA at Sub #124	$	23,828.48
TA0952	Install SCADA at Sub #392	$	31,067.81
TA0953	Install SCADA at Sub #362	$	(158,375.73)
TRANSMISSION ADDITIONS		$	13,408,918.05
TB0001	Transmission Blankets	$	127,612.27
TRANSMISSION BLANKETS		$	127,612.27
TR0001	Replace BO Trans Poles	$	3,503,081.46
TR0009	Misc Rebuilds/Add - Trans Subs	$	245,382.08
TR0010	Misc Rebuilds/Add-Trans Line	$	885,546.26
TR0014	Inst 161kV & 69kV Bus Diff#184	$	300,832.23
TR0113	MDAR Relay Repl Program	$	121,084.34
TR0127	Repl 69kV Infras Tipton Fd#292	$	1,641,367.11
TR0134	Rebuild 69kV Riverton to Joplin	$	(25,571.88)
TR0150	Rebuild 69kV btw Atlas &Kodiak	$	1,881,993.55

TR0152	OPGW on 161kV Noel to Decatur	$	32,396.42
TR0159	Rebuild Powersite Sub 312	$	(65.68)
TR0166	Rebld Riverton to Neosho 161kV	$	13,501,130.24
TR0168	RBLD LINE 161kV & OPGW 413-438	$	2,226,589.96
TR0601	Sub 404 Hockerville Rep Equip	$	15,062.41
TR0602	Sub 221 Billings Reb 69kV Ring	$	31,573.10
TR0901	Rebuild 69kV #186 to #388	$	(32,891.40)
TR0910	Rebld 69kV Boston - Greenfield	$	43,469.98
TR0911	69kV Rebuild #249 to #251	$	22,958.88
TRANSMISSION REBUILDS		$	24,393,939.06
TM0100	W7th to Stateline 161kv Rebuild	$	49,858.42
TM0101	Sub 312 Ozark Dam 16103 Replcm	$	343,458.72
TRANSMISSION		$	393,317.14
TRANSMISSION TOTAL		$	44,389,626.24
TOTAL COMMERCIAL OPERATIONS		$	132,991,966.05

General Services

Funding Project	Description		2023 Actual Expenditures
CS0002	Computers, Servers, Network Eq	$	645,266.09
CS0023	Infrastructure CORE/OT	$	549,409.80
CS0028	Software Upgrades	$	650,497.95
CS0054	LABS Corp IT Allocation	$	3,687.37
CS0066	GIS/ADMS - EDE	$	18,989.88
CS0071	Corp IT Projects	$	1,495,826.68
CX0003	Cust Information Upgrades	$	691,032.64
COMPUTER SERVICES		$	4,054,710.41
GA000	General Projects Not Budgeted	$	(136,022.38)
GA0001	Fleet	$	545,284.64
GA0002	Transportation - Tools	$	254.17
GA0006	Supply stores Facilities & Equip	$	45,276.18
GA0010	Joplin Facilities	$	86,167.07
GENERAL ADDITIONS		$	540,959.68
GF0001	Facilities	$	192,309.19
GENERAL FACILITIES		$	192,309.19
STE010	Install/Remove FM 2-Way Equip	$	221,902.48
STE030	SCADA	$	57,924.20

TELECOMMUNICATIONS		$	279,826.68
AMI001	AMI	$	373,048.97
000000	Projects Not Budgeted	$	(87,885.41)
GENERAL		$	285,163.56
TOTAL GENERAL SERVICES		$	5,352,969.52

Production

Funding Project	Description		2023 Actual Expenditures
NG0021	Wind Project	$	23,396.08
NG0022	Utility Scale Community Solar	$	1,262.87
NG0026	Riverton Replacement	$	1,920,680.23
NEW GENERATION		$	1,945,339.18
GI0001	Generation Interconnects	$	(497,914.94)
Asset Retirement Obligation (ARO) – PCB Transfrms		$	(23,092.25)
ENVIRONMENTAL AND SAFETY		$	(521,007.19)
PA0038	Asbury Ash Impoundment	$	(665.48)
PA0040	Asbury Decommissioning Study	$	(607.49)
Asset Retirement Obligation (ARO) – Asbury		$	(990,860.65)
ASBURY		$	(992,133.62)
Individual PCC projects include the WGI credit			
PCC001	Misc Prod Plant Additions	$	211,400.30
PCC004	HRSG & Aux Equip Additions	$	457,867.08
PCC005	Unit Generator Upgrades	$	(0.01)
PCC006	Turbine Upgrades	$	41,533.94
PCC007	Valve Additions	$	28,944.00
PCC009	Deep Well Pump & Column	$	153,783.63
PCC010	Cooling Tower	$	77,924.25
PCC011	Plant Replacements & Improveme	$	(3,783.64)
PCC012	Turbine Gen Aux Equip Additions	$	3,613.65
PCC013	Environmental & Reg Const	$	11,507.67
PCC019	Control System Upgrade	$	24,119.32
PCC020	Incidental Replacements/Improv	$	309,091.41
STATE LINE COMBINED CYCLE		$	1,316,001.60
PE0001	Misc Production Plant Addition	$	383.74
PE0002	Labor Savings Devices & Tools	$	2,993.09

PE0010	Eng Ctr BOP	$	17,979.45
PE0011	Eng Ctr Unit 1	$	60,136.52
PE0012	Eng Ctr Unit 2	$	71,760.65
PE0013	Eng Ctr Unit 3	$	80,073.45
PE0014	Eng Ctr Unit 4	$	38,019.29
ENERGY CENTER		$	271,346.19
PG0010	Pur & Inst IM Software-Adapt2	$	188,084.46
GENERAL		$	188,084.46
PI0001	Iatan Plant	$	2,687,263.97
IATAN PLANT		$	2,687,263.97
PII001	Iatan 2	$	3,483,669.92
IATAN 2 PLANT		$	3,483,669.92
PIC001	Iatan Common Facilities	$	1,211,228.04
Asset Retirement (ARO) – Iatan Common		$	(665.96)
IATAN COMMON FACILITIES		$	1,210,562.08
PP0001	Plum Point Misc Prod Plant Add	$	417,087.47
PLUM POINT PLANT		$	417,087.47
PO0001	Hydro Plant Additions	$	245,094.93
PO0002	Labor Saving Devices & Tools	$	2,604.90
PO0009	Plant Automation Remote Ctrl	$	10,044.99
PO0010	Improvements to Dam	$	32,482.10
PO0011	Improvements to Lake/Grounds	$	(716.12)
PO0012	Improvement to Powerhouse	$	142,216.50
OZARK BEACH		$	431,727.30
PR0001	Production Plant Additions	$	403,148.54
PR0002	Labor Saving Devices & Tools	$	200,709.76
PR0003	Plant Replacements & Imprvmts	$	319,510.97
PR0006	Boiler & Aux Equip Additions	$	68,127.56
PR0007	Turbine Gen & Aux Equip Add	$	3,815,154.72
PR0009	Lowell & Bypass Replacements	$	413,704.15
PR0010	Environmental & Reg Constr	$	19,149.09
PR0011	Valve Additions	$	62,535.96
PR0012	Pump Additions	$	175,061.14

PR0014	Insulation Improvements	$	1,033,198.55
PR0019	Control System	$	(32,698.59)
PR0021	Water System Additions	$	25,463.42
PR0024	Combustion Turbines	$	1,446,080.11
PR0036	Cooling Tower	$	156,548.14
RIVERTON		$	8,105,693.52
PS0001	Misc ProductionPlant Addition	$	22,237.40
PS0002	Labor Savings Devices & Tools	$	20,477.20
PS0006	Additional CT Upgrades	$	16,812,218.99
STATE LINE		$	16,854,933.59
PW0002	Plant Replacements/Improvement	$	12,507.13
PW0003	Facilities Maintenance	$	163,357.43
PW0004	Land Management Equipment	$	2,094.24
PW0020	Safety Supplies-Confined Space	$	(1,543.43)
WIND		$	176,415.37
TOTAL PRODUCTION		$	35,574,983.84

Wind

Funding Project	Description		2023 Actual Expenditures
NFT001	North Fork Tax Equity	$	127,733.92
ENF001	North Fork – Empire	$	140,052.07
TOTAL NORTH FORK WIND		$	267,785.99
NRT001	Neosho Ridge Tax Equity	$	1,862,493.88
ENR001	Neosho Ridge – Empire	$	2,042,105.42
TOTAL NEOSHO RIDGE WIND		$	3,904,599.30
KPT001	Kings Point Tax Equity	$	33,254.92
EKP001	Kings Point Empire	$	36,461.88
TOTAL KINGS POINT WIND		$	69,716.80
TOTAL WIND		$	4,242,102.09

2023 Actual Spending Grand Total

GRAND TOTAL	$	178,162,021.50

$20 million projects – 2023

Projects included in this report went into service in 2023 and were $20 million or more.[1]

Build New Sub #498 Greenfield

Located in Greenfield, Missouri, Sub #614 was an aged facility with many outdated deficiencies and required a complete replacement. Construction of new substation #498 will allow load growth in the future for Greenfield customers. The project will also allow for switching capabilities in the Greenfield area to offer a more reliable and robust operating system for Liberty-Empire's customers. Previously the town of Greenfield's distribution system was operated at 4kV, limiting back-up or redundant power sources for the area. The new sub #498 is now a 69kV to 12kV substation and the distribution conversion from 4kV to 12kV is planned to be completed in Greenfield in 2024.

Start Date: March 15, 2021
Cost to Date: $22,533,578
In Service Date: May 1, 2023

Rebuild Sub #432 Joplin

Substation #432, located in Joplin, Missouri, served approximately 700 meters (many of which were industrial customers) and had reached the end of its life cycle. The rebuild of Substation #432 will allow for a more modern design to serve seven distribution circuits with provisions to serve an eighth circuit in the future. The replacement of one station transformer and addition of another will allow the substation to provide more reliable service and to facilitate future growth in this area. The project will also allow for switching capabilities to offer a more reliable and robust operating system for Liberty-Empire's customers. Alternative solutions were sought including leaving the existing substation transformer and switchgear, however, analysis proved to have considerable design limitation and maintenance issues.

Start Date: December 1, 2020
Cost to Date: $32,371,799.08
In Service Date: July 12, 2023

[1] This report does not include blanket projects or budget lines.

Rebuild of Riverton to Neosho 161kV Line

The rebuild of the Riverton to Neosho 161kV line was to comply with the Notice to Construct ("NTC") issued to Liberty-Empire on December 13, 2019 (SPP-NTC-C-210549 and subsequent NTC-210570). The replaced line had portions of structures dating back to 1930 and the steel lattice towers were starting to show signs of deterioration and posed a reliability concern if not addressed. In addition to rebuilding the 81-0 line along the same route, new structures and upgraded terminal equipment were placed at Riverton Substation #167, Riverton Substation #452, and Columbus Substation #94. As the project was mandated by Southwest Power Pool ("SPP") requirements there were no alternative solutions to consider.

Start Date: January 1, 2021
Cost to Date: $73,191,146.16
In Service Date: February 28, 2023

$20 million projects - 2024

Projects included in this report are scheduled to begin construction in 2024 and are expected to meet or exceed a total project cost of $20 million.[1]

Riverton 10/11 Replacement

Liberty-Empire relies on Riverton Units 10 and 11 to meet a number of Southwest Power Pool ("SPP") requirements. While these units entered the Company's service in 1988, they were manufactured in 1967. Due to their vintage, there is a lack of readily available replacement parts. Due to Liberty-Empire's obligation to provide safe and reliable services in its load area, these units are a vital part of the Company's generation fleet. The only alternative solution to replacing Riverton Units 10 and 11 is to perform an extensive rebuild of the existing units and to maintain a large inventory of replacement or substitution parts that are not readily available. The replacement of these aging units was evaluated within the Company's IRP process which included stakeholder involvement.

Turbines Ordered: November 2023
Mobilize to Site: February 2025
Expected Cost: $53,000,000
Expected Completion Date: June 2026

Rebuild Sub #292 Tipton Ford

Substation #292 is a critical transmission node on the 161kV system located in Newton County, Missouri. Positioned where four transmission lines converge, Sub #292 is essential in providing reliable power to many Liberty-Empire customers. Rebuilding the substation will improve system reliability through installation of a 161kV ring bus and significant transmission and distribution line work. The project will also allow for replacement of aging assets while at the same time maintaining service to Liberty-Empire customers, allowing Liberty to apply current day standards, install modernized equipment, and prepare the sub for future load growth. Alternative solutions have been sought including installation of an open bus ring, however, it was determined this option had more of a safety concern during construction than the chosen option.

Start Date: September 2024
Expected Cost: $28,193,643
Expected Completion Date: April 20, 2026

[1] This report does not include blanket projects or budget lines.