COMMONWEALTH OF KENTUCKY
BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION

In the Matter of:

Electronic Application of Jackson Purchase Energy Corporation for a General Adjustment of Rates and Other General Relief	)	Case No. 2024-00085

JACKSON PURCHASE ENERGY CORPORATION'S VERIFIED RESPONSE TO THE ATTORNEY GENERAL'S FIRST REQUESTS FOR INFORMATION ENTERED MAY 29, 2024

Comes now Jackson Purchase Energy Corporation (Jackson Purchase), by counsel, and does hereby tender its Verified Response to the Attorney General's First Request for Information entered May 29, 2024.

Entered June 12, 2024

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF JACKSON PURCHASE ENERGY CORPORATION FOR A GENERAL ADJUSTMENT OF RATES	)))))	Case No. 2024-00085

VERIFICATION OF GREG GRISSOM

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF McCRACKEN)

Greg Grissom, Chief Executive Officer of Jackson Purchase Energy Corporation, being duly sworn, states that he has supervised the preparation of certain responses to Attorney General's First Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of his knowledge, information and belief, formed after reasonable inquiry.

Greg Grissom

The foregoing Verification was signed, acknowledged and sworn to before me this 12th day of June, 2024, by Greg Grissom.

AMY VICK
Notary ID # KYNP56841
Commission Expires 08-25-2026
NOTARY PUBLIC
STATE AT LARGE, KENTUCKY

Commission expiration: 8/25/2026

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF JACKSON PURCHASE ENERGY CORPORATION FOR A GENERAL ADJUSTMENT OF RATES	)))))	Case No. 2024-00085

VERIFICATION OF MEREDITH KENDALL

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF McCRACKEN)

Meredith Kendall, Vice-President and Chief Financial Officer of Jackson Purchase Energy Corporation, being duly sworn, states that she has supervised the preparation of certain responses to Attorney General's First Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

Meredith Kendall
Meredith Kendall

The foregoing Verification was signed, acknowledged and sworn to before me this 12th day of June, 2024, by Meredith Kendall.

AMY VICK NOTARY PUBLIC STATE AT LARGE, KENTUCKY My Notary ID # KYNP55884 Commission Expires 08-25-2026

Commission expiration: 8/25/2026

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE ELECTRONIC APPLICATION OF JACKSON PURCHASE ENERGY CORPORATION FOR A GENERAL ADJUSTMENT OF RATES	)))))	Case No. 2024-00085

VERIFICATION OF JOHN WOLFRAM

COMMONWEALTH OF KENTUCKY)
)
COUNTY OF JEFFERSON)

John Wolfram, being duly sworn, states that he has supervised the preparation of certain responses to the Attorney General's First Request for Information in the above-referenced case and that the matters and things set forth therein are true and accurate to the best of her knowledge, information and belief, formed after reasonable inquiry.

John Wolfram

The foregoing Verification was signed, acknowledged and sworn to before me this 3rd day of June, 2024, by John Wolfram

Commission expiration: 04/08/2026

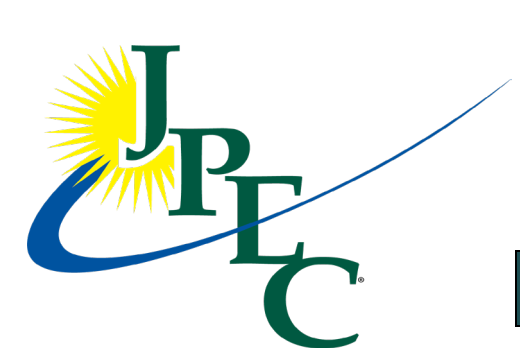
COREY SCOTT JONES
Notary Public - State at Large
Kentucky
My Commission Expires April 08, 2026
Notary ID KYNP48750

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 1: Refer to the Application generally. Provide an organizational chart of Jackson Purchase Energy, including all positions. If a position is vacant, please designate as such.

Response 1: Please see attached.

ATTACHMENT AG 1-1



MEMBER OWNERS

BOARD OF DIRECTORS

AUDITORS — **ATTORNEY**

David Brandon
Director of Safety & Environmental Compliance

Greg Grissom
President / CEO

Amy Vick
Executive Assistant

36	Non-Bargaining Employee
30	Bargaining Employee
	Independent Contractor
Total 66	6/3/2024

Travis Spiceland
VP Engineering

- **Connor Riley** — Distribution Engineer
- **Michelle Pearson** — Joint Use Administrator
- **Andy Pollard, Greg Sanderson, Mason Waldridge** — Field Engineer
- **Rick Wilson** — GIS Technician
- **Engineering Intern**
- **Line Inspection Contractors**
- **Field Engineering Interns**

Cassidy McClain
Admin. Assistant

Ward Morgan
V.P. Operations & Technical Services

Bobby Morehead
Mgr. of Warehousing & Purchasing

- **Matt Williams** — Material Handler
- **Shane Hardie** — Building & Grounds
- **Janitorial Contractor**

Keith Burrow
Mgr. of Right-of-Way & Special Projects

- **Right-of-Way Contractors**

Jeremy Goodman
Mgr. of Operations

Line Technicians
Taylor Colley - J
David Cotton - J
Brady Cox - A
Colin Crawford - J
Gabe DeFew - A
Terry Doublin - CL
Aiden Fugate - A
Kenny Harper - CL
Brian Hurley - J
Jimmy Johnson - J
Micah Joiner - J
Jake Mills - J
Dylan Reed - J
Tyler Richardson - A
Matt Riley - J
Josh Seay - J
Joe Simmons - J
Robby Smith - CL
Jason Story - CL
John Sutton - J
Micah Swift - A
Zach Thweatt - J
Eric Todd - CL
Mike Washam - CL
Billy Womble - J

- **Jason Gipson** — Substation Crew Leader
  - **Vacant** — Electronic Technician
  - **Dustin Cope** — Substation Technician
- **Jamie Hardin, Kelly Russell** — Meter Readers
- **Barry Marine** — Lead Dispatcher
  - **Jason Luebker, Jonas Roberts, Tucker Threatt, Gary Vaughn** — Dispatchers
- **Jason Taylor** — Maintenance Mechanic
- **Meter Reading Contractors**

Mark Brueggert
Mgr. of Information Technology

- **Kris Nance** — Tech. Services Specialist

Mark Lindsey
V.P. Human Resources, Communications & Member Services

- **Vanessa Blagg** — Human Resources Generalist, Payroll, Member Services

Meredith Kendall
V.P. of Finance & Accounting

Ashley Turner
Mgr. of Member Services

- **Amber Daniels** — Lead Member Services Rep.
  - **Jennifer Denton, Sandy Duncan, Lauren Lampley, Sabrina Quertermous** — Member Services Representatives

Becky Blackwell
Accounting Analyst

- **Sonja Collier** — Accounting Analyst
- **VACANT** — Accounting Analyst
- **VACANT** — Lead Billing & AMI Specialist
  - **Stefanie Horton** — Billing & AMI Specialist

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 2: Refer to the Application, page 1, in which Jackson Purchase Energy states that provides electric power to approximately 23,000 members in the Kentucky counties of Ballard, Carlisle, Graves, Livingston, Marshall, and McCracken.

a. Provide a detailed account of all economic issues that the Company's customers in the above-referenced counties are combating at the present time.

b. Provide Jackson Purchase Energy's actual number of customers for the years 2014 – 2024.

c. Explain in detail whether Jackson Purchase Energy projects a future gain or loss of electric customers, and provide copies of all projections concerning the same.

d. Provide Jackson Purchase Energy's total annual energy sales for the years 2014 – 2024.

e. Explain whether Jackson Purchase Energy expects annual energy sales to increase or decrease, and provide copies of all projections concerning the same.

f. Provide a map of Jackson Purchase Energy's electric service area.

g. Provide a list of all rural electric cooperatives and investor-owned electric utilities whose service territory is contiguous with Jackson Purchase Energy's service territory.

h. Explain whether Jackson Purchase Energy has ever worked, or plans on working, with any other rural electric cooperative or investor-owned electric utility on any

joint ventures to provide electricity to Ballard, Carlisle, Graves, Livingston, Marshall, and McCracken counties.

i. Based upon the most recent United States Census information, the poverty rates for Jackson Purchase Energy's electric service area are as follows:

Ballard County – 15%,

Carlisle County – 16.2%,

Graves County – 18.8%,

Livingston County – 14.6%,

Marshall County – 12.6%,

McCracken County – 15.2%.

Confirm that Jackson Purchase Energy is aware of the above percentages of its electric customers who live at or below the poverty line.

Response 2a: Inflationary pressures and general increases in the cost of living are issues that Jackson Purchase's member-owners currently face.

Response 2b: Please see the Excel file provided separately.

Response 2c: Jackson Purchase does not expect substantial customer growth or decline. Please see the attached load forecast. (Responses 2c and 2e reference the same attachment.)

Response 2d: Please see the Excel file provided separately.

Response 2e: Jackson Purchase does not expect substantial load growth or decline. Please see the attached load forecast. (Responses 2c and 2e reference the same attachment.)

Response 2f: Map provided separately due to file size.

Response 2g: The map of Jackson Purchase's system (attached in response to request 2(f) above) shows the electric providers that are contiguous to Jackson Purchase's territory. These include Kenergy, KY Utilities, Paducah Power System, and West KY Rural Electric.

Response 2h: Jackson Purchase has not considered merging with any other cooperative.

Response 2i: Confirmed.

ATTACHMENT AG 1-2c and AG 1-2e

2023 Load Forecast Report

PREPARED FOR:

JACKSON PURCHASE ENERGY CORPORATION

Big Rivers
ELECTRIC CORPORATION

PREPARED BY:

CLEARSPRING ENERGY ADVISORS

AUGUST 2023

Clearspring Energy Advisors LLC

2023 Jackson Purchase Energy Corporation Load Forecast Study

Developed in partnership with

Big Rivers Electric Corporation

and

Jackson Purchase Energy Corporation

August 11, 2023

Prepared By:

Clearspring Energy Advisors LLC

1050 Regent St., Suite L3

Madison, WI 53715

608.442.8668

TABLE OF CONTENTS

1 INTRODUCTION AND SYSTEM SUMMARY

1.1 PROJECT OVERVIEW

The 2023 Big Rivers Electric Corporation ("Big Rivers") electric load forecast has been created from the bottom up. That is, forecast models have been developed for each of the three distribution systems served by Big Rivers and then integrated into Big Rivers' forecast. Each distribution Member forecast is conducted separately, and each distribution Member has reviewed and approved the load forecast applicable to its system.

Clearspring Energy Advisors, LLC (Clearspring) was selected by Big Rivers and its Members to prepare this 2023 electric load forecast. The forecasting process relies on internal system data, third-party demographic and economic data, and insight from cooperative staff that are most familiar with the end-uses and trends in the service territory. An emphasis has been placed on strong coordination between Big Rivers, the three Member systems, and Clearspring in preparing this study to ensure accurate and useful load forecast results.

The forecast team members include the following individuals:

Project Team

Name	Company	Role
Marlene Parsley	Big Rivers Electric Corporation	Project Manager
Terry Wright	Big Rivers Electric Corporation	Project Manager
Russ Pogue	Big Rivers Electric Corporation	DSM Study
Travis Spiceland	Jackson Purchase Energy Corporation	Load Forecast Representative
Meredith Kendall	Jackson Purchase Energy Corporation	Load Forecast Representative
Matt Sekeres	Clearspring Energy Advisors	Lead Consultant
Steve Fenrick	Clearspring Energy Advisors	Econometric Model Development
Josh Hoyt	Clearspring Energy Advisors	DSM Study

The forecast results meet the requirements of and will be used in USDA Rural Utilities Service ("RUS") loan applications. The forecast will be used by Big Rivers as a key input into an Integrated Resource Plan ("IRP") being completed to satisfy Kentucky Public Service Commission ("Commission") statutory requirements, and the forecast will be used for other internal uses such as planning and financial projections. This forecast was developed using methods and procedures in general use by the electric utility industry.

1.2 Big Rivers Member Information

The three distribution cooperatives are Jackson Purchase Energy Corporation ("JPEC"), Kenergy Corporation ("Kenergy"), and Meade County Rural Electric Cooperative Corporation ("MCRECC"). These three Big Rivers Members serve more than 120,000 residential households, businesses, and farms in western Kentucky. This report details the load forecast for JPEC.

JPEC served more than 30,000 members in 2022 and maintains 2,970 miles of power line. The service territory of JPEC is circled below.

Service Territory

1.3 FORECAST SUMMARY

The forecast study develops a forecast for individual retail classes. The forecasted retail classes are:

- Residential,
- General Commercial and Industrial ("GCI"),
- Large Commercial and Industrial ("LCI"),
- Irrigation,
- Street & Highway, and
- Direct Serve sales.

The Residential, GCI, LCI, Irrigation, and Street and Highway classes along with distribution and own losses make up the Rural system requirements. Direct Serve sales are aggregated with the Rural system to provide total system requirements. JPEC's retail class sales forecast is the product of the consumer forecast and the use per consumer forecast for each class. JPEC's total sales forecast is constructed by summing the individual retail class sales forecasts.

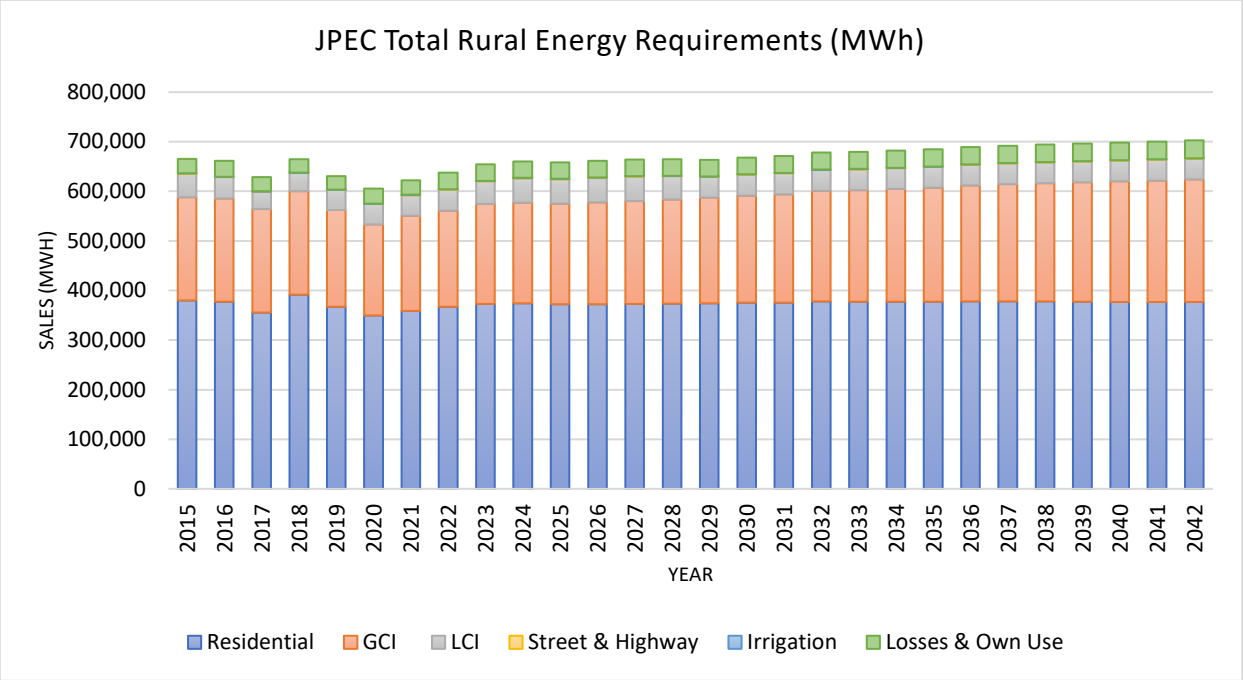
The table below provides JPEC's Rural energy requirements, Direct Serve energy requirements, Rural peak demand coincident to Big Rivers, Direct Serve sum of individual non-coincident peak (NCP) and Rural system load factor for the last five historical years (2018-2022) and the forecasts for the next 20 years.

System Summary

JPEC System Totals					
Year	Total Rural Energy Requirements (MWh)	Direct Serve Energy Requirements (MWh)	Rural System Coincident Peak Demand (MW)	Direct Serve Sum of Individual NCP (MW)	Rural System Coincident Peak Load Factor
2018	664,405	866	145.0	1.8	52.3%
2019	630,787	390	123.2	1.7	58.5%
2020	605,330	36	134.6	0.0	51.2%
2021	622,286	0	143.2	0.0	49.6%
2022	637,651	165,285	151.3	31.0	48.1%
2023	654,155	226,800	137.6	27.8	54.3%
2024	660,499	239,301	138.0	29.3	54.5%
2025	658,568	239,301	137.6	29.3	54.6%
2026	661,252	239,301	138.1	29.3	54.7%
2027	664,056	239,301	138.6	29.3	54.7%
2028	664,829	239,301	139.3	29.3	54.3%
2029	663,586	239,301	138.7	29.3	54.6%
2030	668,093	239,301	139.6	29.3	54.6%
2031	670,850	239,301	140.1	29.3	54.6%
2032	678,116	239,301	141.6	29.3	54.5%
2033	679,533	239,301	141.9	29.3	54.7%
2034	682,022	239,301	142.4	29.3	54.7%
2035	684,747	239,301	142.9	29.3	54.7%
2036	689,431	239,301	143.9	29.3	54.5%
2037	691,895	239,301	144.4	29.3	54.7%
2038	694,093	239,301	144.8	29.3	54.7%
2039	696,210	239,301	145.2	29.3	54.7%
2040	698,054	239,301	145.5	29.3	54.6%
2041	699,971	239,301	145.9	29.3	54.8%
2042	702,408	239,301	146.4	29.3	54.8%
Average Annual Growth Rates					
Previous 10 Years	-0.40%	41.17%	-0.47%	31.19%	0.05%
Previous 5 Years	0.29%	100.07%	0.32%	57.98%	-0.02%
Next 5 Years	0.81%	7.68%	-1.73%	-1.09%	2.59%
Next 10 Years	0.62%	3.77%	-0.66%	-0.55%	1.25%
Next 20 Years	0.48%	1.87%	-0.16%	-0.27%	0.65%

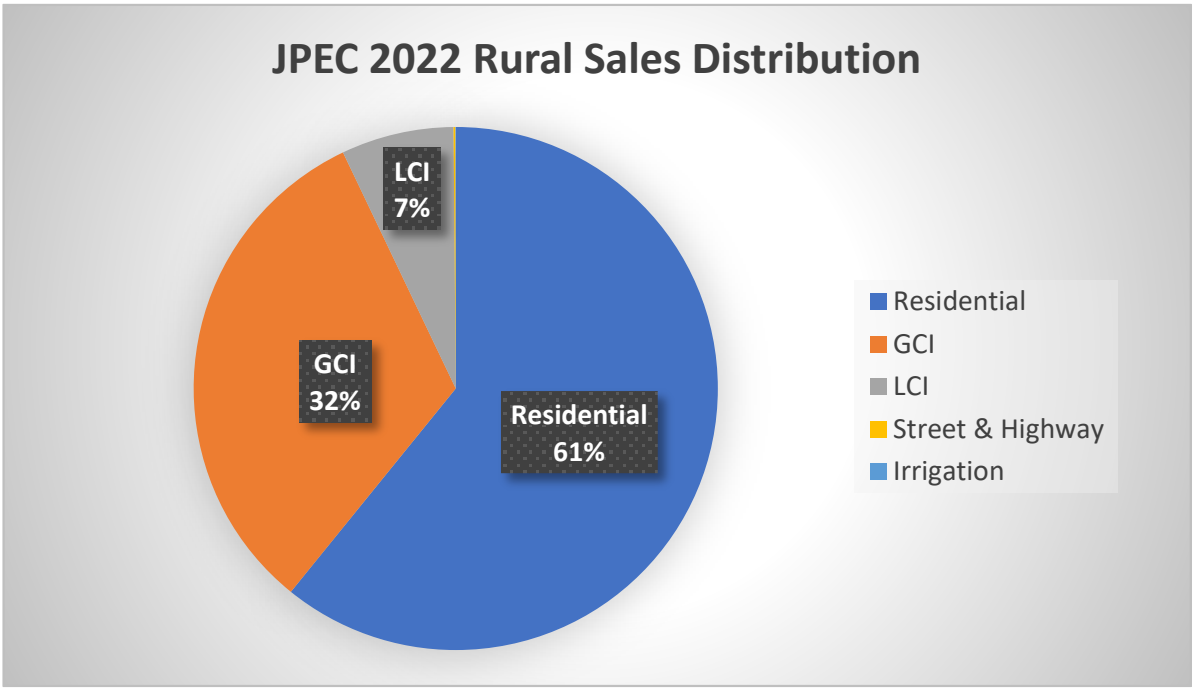
The following graph provides JPEC's Rural energy requirements forecast.

Rural Energy Requirements



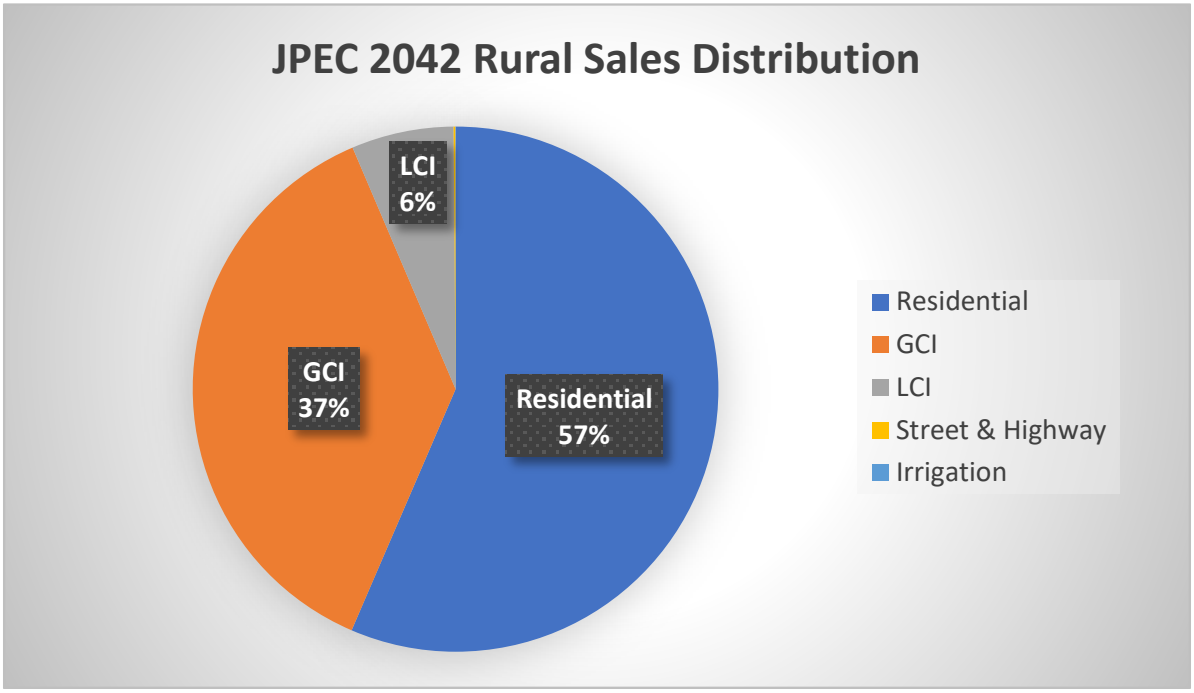
The figure below provides JPEC's Rural sales distribution by class for 2022.

2022 Sales by Class Distribution



The figure below provides JPEC's Rural sales forecasted distribution by class for 2042.

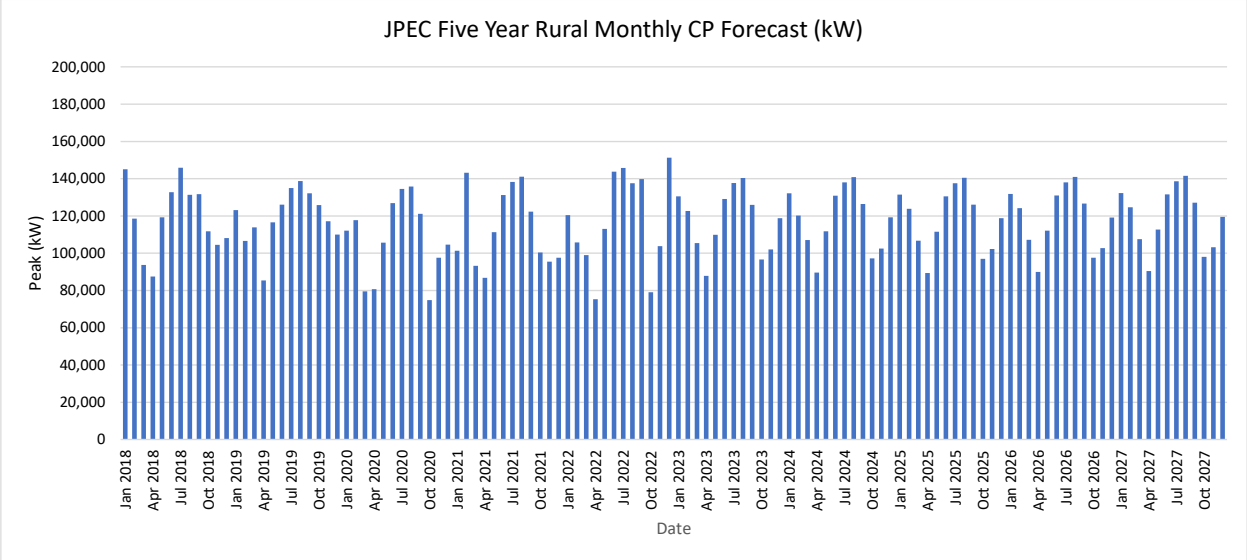
2042 Sales by Class Distribution



1.3.1 Monthly Peak Forecast

Monthly load factors have been econometrically modeled for each Member system. The load factor models are used in conjunction with the energy forecasts to calculate monthly peak demands. The monthly Rural peak demand forecast (coincident with Big Rivers) for the prior and next five years is presented in the following figure.

Monthly Rural Peak Forecast

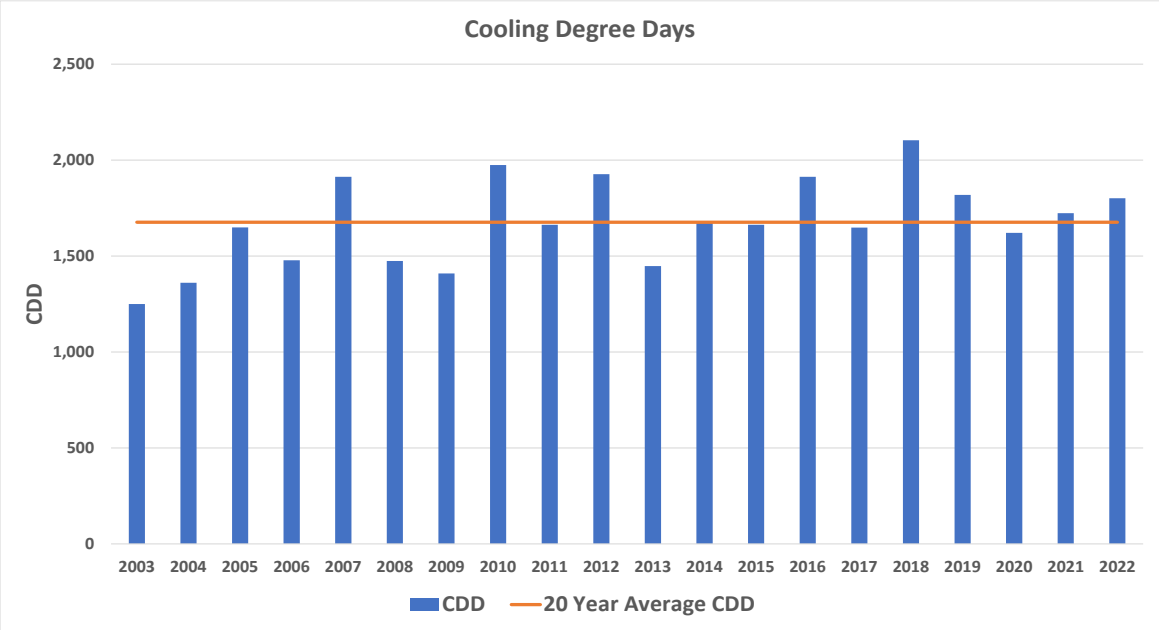


1.4 2022 Weather Conditions

There contains an assumption of a “normal” weather scenario for each class. Clearspring Energy compiled historical weather observations to enable the estimation of weather impacts on sales and peak loads. Weather variables such as cooling degree days (CDD), heating degree days (HDD), and peak temperatures were gathered using weather stations within each service territory. Paducah, KY was used as the primary weather station to gather data for JPEC. In the cases of missing historical data at Paducah, a variety of backup stations were used to fill in missing data.

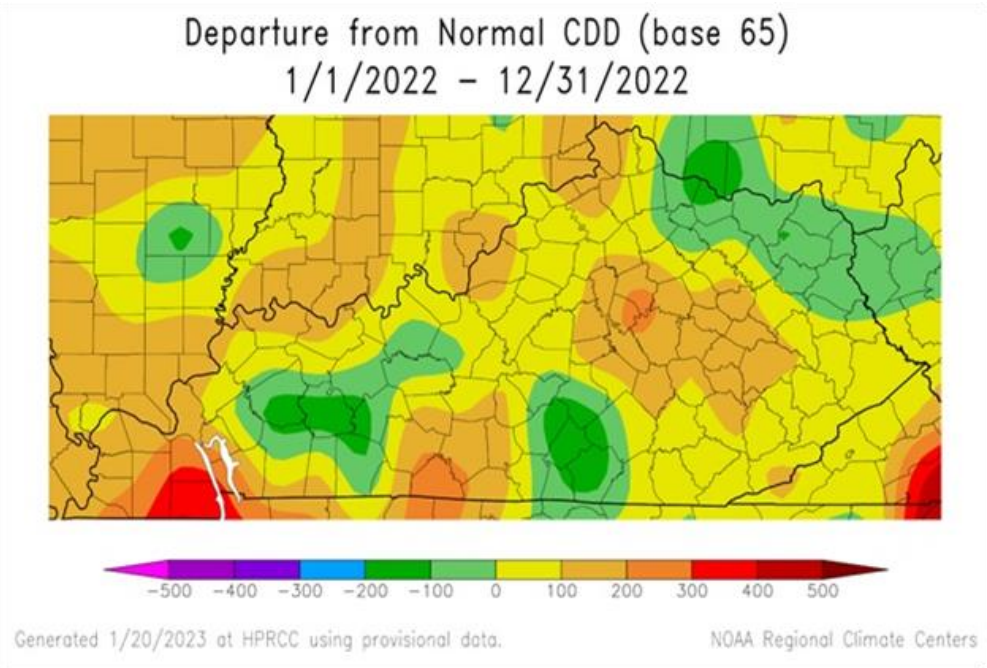
The figure below displays the last twenty years of CDDs for JPEC along with the 20-year average CDD.

Cooling Degree Days for Last 20 Years



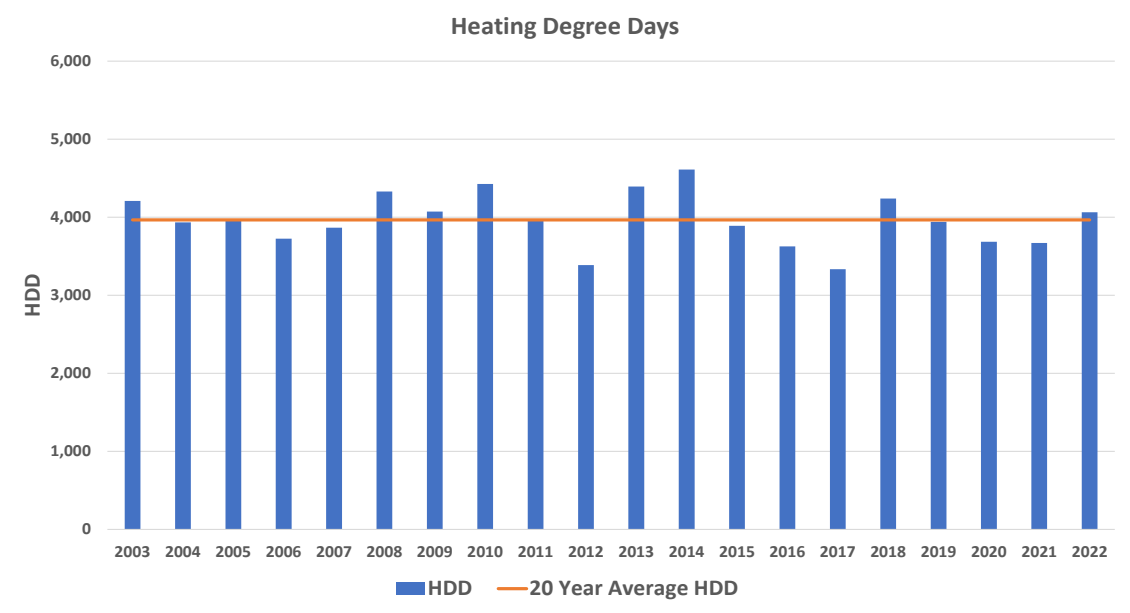
The figure below provides the CDD deviation in 2022 from a 30-year normal amount for the entire state of Kentucky.

Kentucky 2022 CDD Deviations



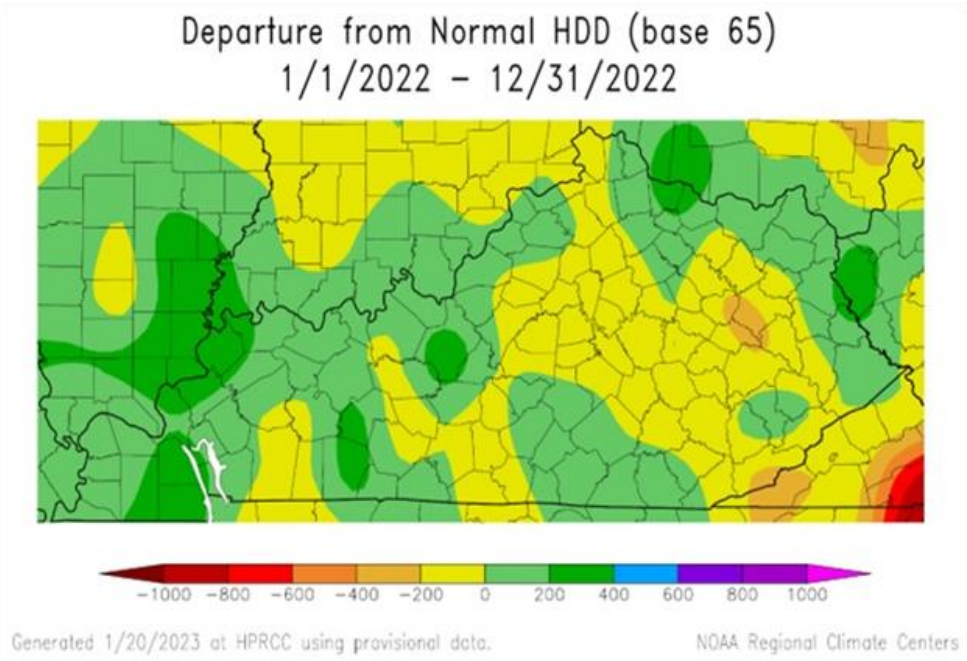
The figure below displays the last twenty years of HDDs for JPEC along with the 20-year average HDD.

Heating Degree Days for Last 20 Years



The figure below provides the HDD deviation in 2022 from a 30-year normal amount for the entire state of Kentucky.

Kentucky 2022 HDD Deviations



1.5 FORECAST PROCESS SUMMARY

Clearspring developed econometric models in order to forecast Residential energy per consumer, General C&I (GCI) consumers, GCI use per consumer, and the Rural system's monthly load factors. A growth index using projections for the number of households was used to forecast Residential consumers. Historical weather and economic data were gathered from various sources to estimate the impacts of variables onto the corresponding category. Normalized weather and forecasted economic variables are then combined with the parameter estimates of the models to calculate forecasted values.

Prior to forecasting Residential and GCI use per consumer models, historical usage for electric vehicles and distributed generation are removed from the historical modeling dataset. These two sectors are forecasted independently using data from publicly available sources. The results for each of these two sectors are then aggregated with the results from the econometric models to create the final class forecasts.

Forecasts for the LCI and Direct Serve commercial loads have been prepared based on input from the cooperatives and historical value. Judgment and trend analysis are used to project Irrigation, Street and Highway, own use, and distribution losses. The forecasts have been provided to Big Rivers and the Member systems and have been approved by each.

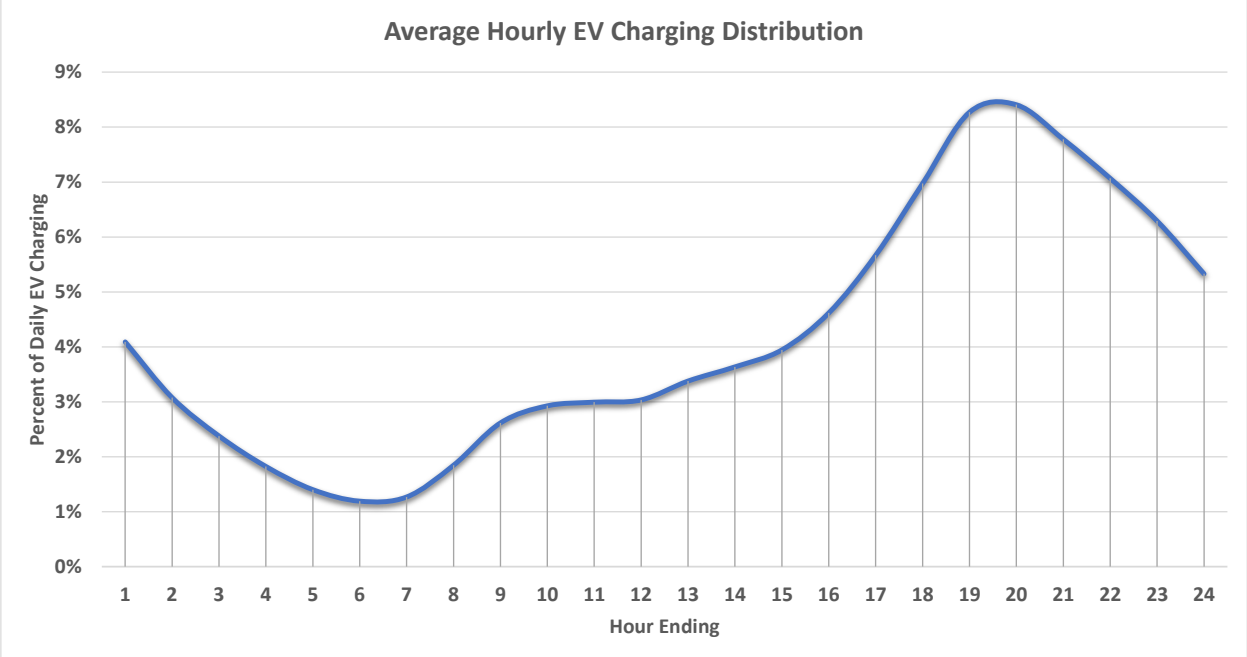
2 Electric Vehicle and Distributed Generation Forecast

2.1 Electric Vehicle Forecast

The electric vehicle (EV) forecast is produced by first isolating the estimated historical contribution of EV charging to Residential and GCI energy and peak load. Historical and projected annual EV energy charging values are derived from statewide vehicle registration data and regional projections created by the Energy Information Administration (EIA) Annual Energy Outlook.

The EV charging annual energy values are then fit to monthly and hourly contributions using estimated load shapes obtained by the Department of Energy Alternative Fuels Data Center. Ten years of monthly system peaking times are assessed to determine the likelihood of each hour of the day becoming the system peak hour, with each occurrence given a ten percent weighting. Big Rivers coincident peak projections from EV charging are then created using the hourly load shapes during the likely peaking hours each month. While slightly different seasonal shapes are used for the forecast, the figure below shows the average daily load shape used for EV charging.

Electric Vehicle Load Shape



The table below shows the estimated historical contributions for the last five years, and the twenty-year forecast for Residential EV charging energy, GCI EV charging energy, additional associated distribution losses, and Big River's coincident peak contributions.

Electric Vehicle Forecast

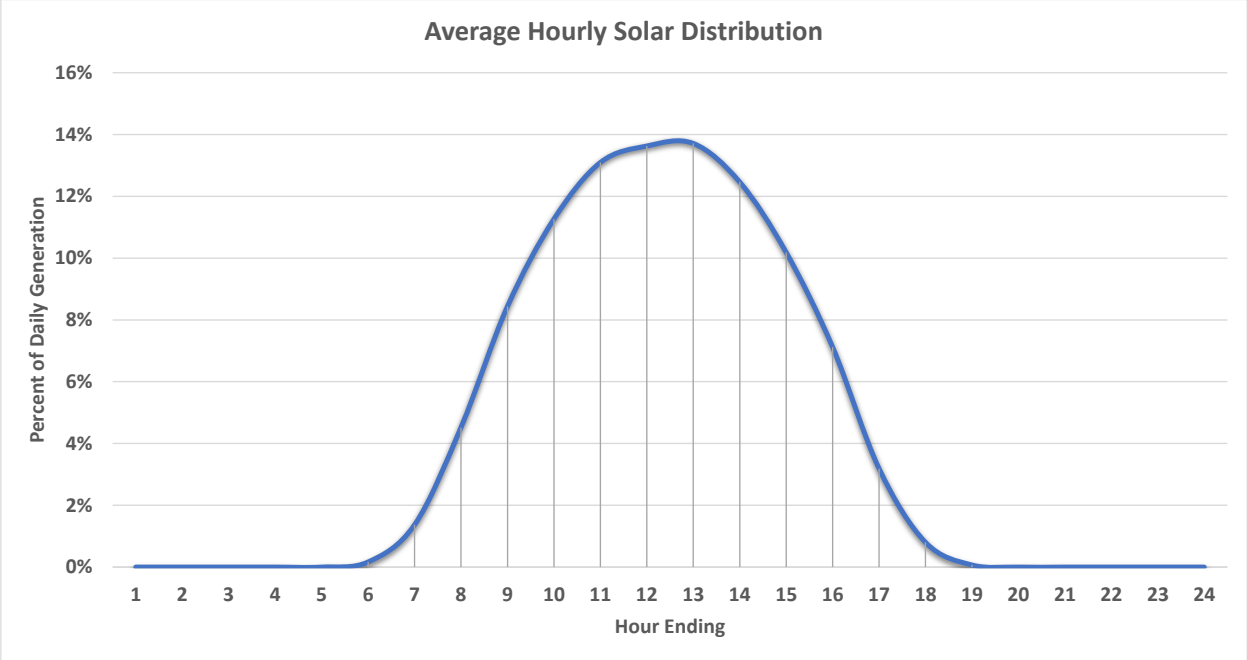
JPEC Rural System Electric Vehicle Forecast					
Year	Residential Energy (MWh)	Commercial Energy (MWh)	Distribution Losses (MWh)	Total Energy (MWh)	Rural Coincident Peak Contribution (kW)
2018	66	27	4	97	12
2019	91	37	6	133	16
2020	115	47	8	170	23
2021	178	73	12	263	22
2022	361	147	27	536	44
2023	584	239	42	865	117
2024	825	337	59	1,221	165
2025	1,079	441	78	1,598	216
2026	1,346	550	97	1,993	269
2027	1,616	660	117	2,392	323
2028	1,882	768	136	2,785	377
2029	2,147	877	155	3,178	430
2030	2,416	986	174	3,576	484
2031	2,685	1,097	194	3,976	538
2032	2,954	1,206	213	4,373	591
2033	3,224	1,316	232	4,773	645
2034	3,495	1,427	252	5,175	700
2035	3,765	1,537	271	5,573	754
2036	4,034	1,647	291	5,972	807
2037	4,305	1,758	310	6,373	862
2038	4,575	1,868	330	6,774	916
2039	4,846	1,979	350	7,175	970
2040	5,115	2,089	369	7,573	1,024
2041	5,380	2,197	388	7,965	1,077
2042	5,641	2,303	407	8,351	1,129
Average Annual Growth Rates					
Previous 10 Years	-	-	-	-	-
Previous 5 Years	50.44%	50.44%	54.37%	50.62%	36.27%
Next 5 Years	34.95%	34.95%	33.82%	34.89%	49.10%
Next 10 Years	23.39%	23.39%	22.87%	23.37%	29.70%
Next 20 Years	14.73%	14.73%	14.49%	14.72%	17.63%

2.2 Distributed Generation Forecast

The distributed generation (DG) forecast is produced by first isolating the estimated historical contribution of DG to Residential and GCI energy and peak load. Historical DG installed capacity amounts are obtained directly from Big Rivers for each of the three distribution Members. Forecasted annual DG amounts are derived from the EIA Annual Energy Outlook.

The DG annual energy values are then fit to monthly and hourly contributions using estimated load shapes obtained by the National Renewable Energy Laboratory (NREL). Ten years of monthly system peaking times are assessed to determine the likelihood of each hour of the day becoming the system peak hour, with each occurrence given a ten percent weighting. Big Rivers coincident peak projections from DG are then created using the hourly load shapes during the likely peaking hours each month. While different DG load shapes are used for each calendar month in the forecast, the figure below shows the average daily load shape used for DG.

Distributed Generation Load Shape



The table below shows the estimated historical contributions for the last five years, and the twenty-year forecast for Residential DG energy, GCI DG energy, additional associated distribution losses, and Big River's coincident peak contributions. Note that the values displayed are negative because they represent a reduction in JPEC energy requirements.

Distributed Generation Forecast

JPEC Rural System Distributed Generation Forecast					
Year	Residential Energy (MWh)	Commercial Energy (MWh)	Distribution Losses (MWh)	Total Energy (MWh)	Rural Coincident Peak Contribution (kW)
2018	-258	-182	-18	-458	-1
2019	-323	-228	-24	-576	-1
2020	-369	-261	-33	-663	-147
2021	-670	-473	-55	-1,198	-5
2022	-745	-534	-68	-1,348	-8
2023	-828	-600	-73	-1,501	-334
2024	-892	-666	-80	-1,637	-364
2025	-955	-711	-85	-1,752	-389
2026	-1,021	-763	-91	-1,875	-417
2027	-1,089	-806	-97	-1,991	-443
2028	-1,159	-838	-102	-2,098	-466
2029	-1,231	-879	-108	-2,218	-493
2030	-1,305	-904	-113	-2,322	-516
2031	-1,383	-944	-119	-2,446	-544
2032	-1,464	-971	-125	-2,559	-569
2033	-1,552	-1,009	-131	-2,693	-599
2034	-1,647	-1,043	-138	-2,828	-629
2035	-1,744	-1,058	-143	-2,945	-655
2036	-1,845	-1,097	-151	-3,092	-687
2037	-1,951	-1,135	-158	-3,244	-721
2038	-2,058	-1,171	-165	-3,394	-755
2039	-2,174	-1,224	-174	-3,572	-794
2040	-2,297	-1,273	-183	-3,752	-834
2041	-2,422	-1,313	-191	-3,926	-873
2042	-2,557	-1,361	-201	-4,119	-916
Average Annual Growth Rates					
Previous 10 Years	-	-	-	-	-
Previous 5 Years	37.70%	38.07%	41.46%	38.02%	-32.87%
Next 5 Years	7.87%	8.57%	7.25%	8.12%	122.29%
Next 10 Years	6.98%	6.16%	6.20%	6.62%	52.88%
Next 20 Years	6.36%	4.79%	5.53%	5.74%	26.62%

After the Residential, GCI, and load factor models are run without the presence of EV charging and DG usage, the forecast results for EV charging and DG are added back into each associated area. All class and system forecast data presented in the later sections of this report represent the final forecast with EV and DG included.

3 ENERGY FORECAST RESULTS

3.1 Residential Class

The Residential sales forecast is comprised of a forecast for Residential use per consumer and a forecast for Residential retail members. The product of the two disaggregated forecasts equals the Residential sales forecast.

The following table provides the last five years of historical data and the next 20 years of forecasted data for the number of Residential customers, Residential use per consumer, and Residential energy sales. Growth rates for the prior 5 and 10 years and projected growth rates for the next 5, 10, and 20 years are also provided.

Historical and Projected Residential Consumers, Use per Consumer, and Sales

JPEC Residential Class						
Year	Number of Consumers	% Change per Year in Consumers	Use Per Consumer (kWh)	% Change per Year in Use Per Consumer	Energy Sales (MWh)	% Change per Year in Energy Sales
2018	25,578		15,323		391,939	
2019	25,511	-0.26%	14,398	-6.04%	367,296	-6.29%
2020	25,572	0.24%	13,687	-4.94%	349,995	-4.71%
2021	25,616	0.17%	14,014	2.39%	358,997	2.57%
2022	25,574	-0.16%	14,368	2.52%	367,448	2.35%
2023	25,570	-0.02%	14,593	1.56%	373,138	1.55%
2024	25,677	0.42%	14,579	-0.09%	374,345	0.32%
2025	25,764	0.34%	14,454	-0.86%	372,409	-0.52%
2026	25,837	0.28%	14,423	-0.22%	372,648	0.06%
2027	25,896	0.23%	14,408	-0.11%	373,097	0.12%
2028	25,942	0.18%	14,405	-0.02%	373,698	0.16%
2029	25,976	0.13%	14,421	0.11%	374,593	0.24%
2030	25,997	0.08%	14,446	0.18%	375,556	0.26%
2031	26,009	0.05%	14,446	0.00%	375,723	0.04%
2032	26,010	0.01%	14,527	0.56%	377,857	0.57%
2033	26,003	-0.03%	14,513	-0.10%	377,367	-0.13%
2034	25,990	-0.05%	14,517	0.03%	377,291	-0.02%
2035	25,971	-0.07%	14,526	0.06%	377,263	-0.01%
2036	25,948	-0.09%	14,573	0.32%	378,131	0.23%
2037	25,921	-0.11%	14,585	0.09%	378,053	-0.02%
2038	25,889	-0.12%	14,594	0.06%	377,825	-0.06%
2039	25,854	-0.14%	14,602	0.06%	377,528	-0.08%
2040	25,817	-0.14%	14,608	0.04%	377,144	-0.10%
2041	25,782	-0.13%	14,615	0.04%	376,807	-0.09%
2042	25,752	-0.12%	14,625	0.07%	376,628	-0.05%
Average Annual Growth Rates						
Previous 10 Years	-0.14%		-0.60%		-0.74%	
Previous 5 Years	-0.05%		0.70%		0.66%	
Next 5 Years	0.25%		0.06%		0.31%	
Next 10 Years	0.17%		0.11%		0.28%	
Next 20 Years	0.03%		0.09%		0.12%	

3.1.1 Residential Consumer Forecast

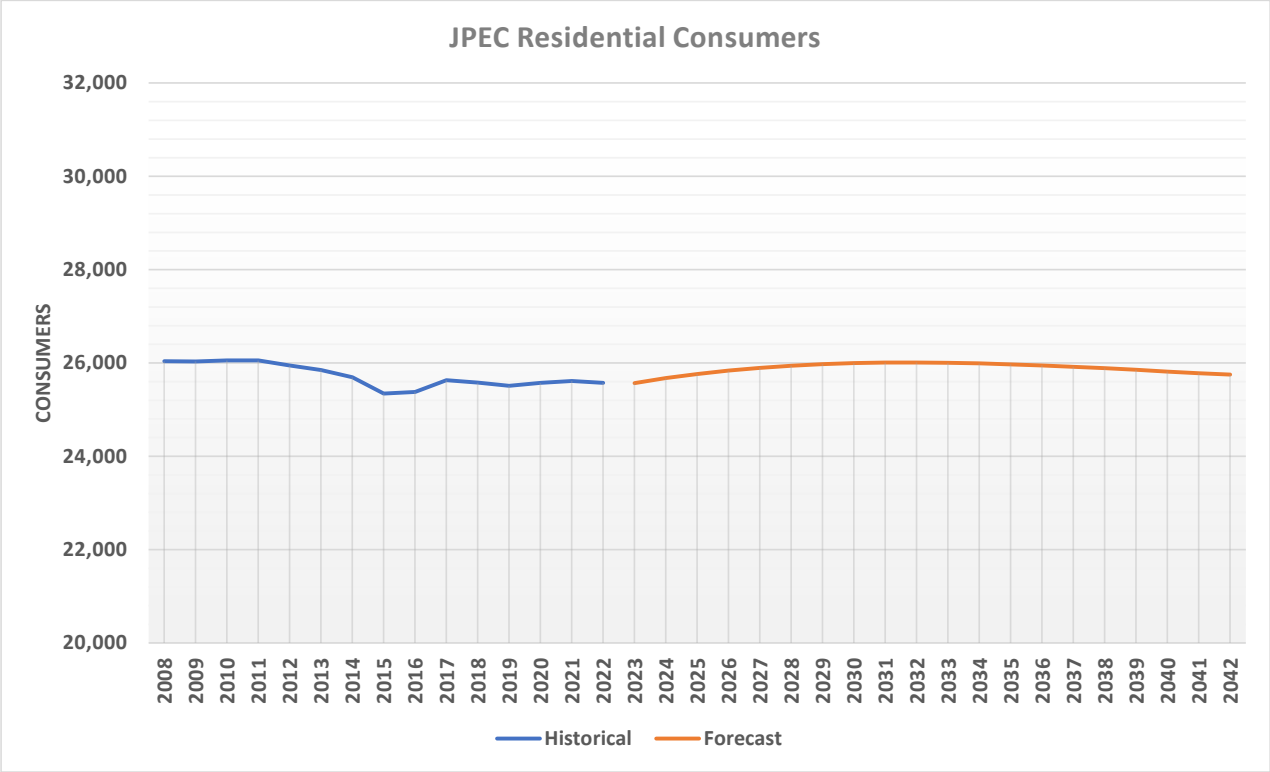
Third party household growth projections are gathered from Woods & Poole Economics, Inc. and are combined with input from JPEC staff. Household growth estimates for each county within JPEC's service territory are used to project the number of Residential members in future years. The following table provides the historical and projected data used to forecast Residential consumers. Actual county level consumer data was provided for 2022. County distributions prior to 2019 have been estimated.

Historical and Projected Residential Consumers By County

JPEC Residential Consumers							
Year	Residential Accounts by County						
	Ballard	Carlisle	Graves	Livingston	Marshall	McCracken	
	Percentage of County Served						
	52.4%	16.3%	10.2%	89.2%	22.1%	29.3%	**Total**
2003	2,284	445	2,032	4,642	3,985	11,429	**24,817**
2004	2,304	449	2,050	4,682	4,019	11,527	**25,030**
2005	2,331	454	2,074	4,738	4,067	11,665	**25,329**
2006	2,357	459	2,097	4,790	4,112	11,793	**25,607**
2007	2,373	462	2,111	4,822	4,140	11,873	**25,781**
2008	2,397	467	2,132	4,870	4,181	11,991	**26,038**
2009	2,396	467	2,132	4,869	4,180	11,989	**26,033**
2010	2,398	467	2,133	4,873	4,183	11,998	**26,053**
2011	2,398	467	2,133	4,873	4,184	11,999	**26,054**
2012	2,388	465	2,124	4,853	4,166	11,948	**25,944**
2013	2,380	463	2,117	4,835	4,151	11,906	**25,852**
2014	2,365	460	2,104	4,806	4,126	11,833	**25,694**
2015	2,333	454	2,075	4,741	4,070	11,673	**25,347**
2016	2,336	455	2,078	4,747	4,075	11,688	**25,380**
2017	2,359	459	2,099	4,794	4,116	11,805	**25,632**
2018	2,354	458	2,094	4,784	4,107	11,780	**25,578**
2019	2,348	457	2,089	4,772	4,096	11,748	**25,511**
2020	2,354	458	2,094	4,783	4,106	11,777	**25,572**
2021	2,358	459	2,098	4,791	4,113	11,797	**25,616**
2022	2,354	458	2,094	4,783	4,107	11,778	**25,574**
2023	2,351	457	2,094	4,778	4,109	11,782	**25,570**
2024	2,356	458	2,103	4,789	4,131	11,840	**25,677**
2025	2,359	458	2,110	4,797	4,149	11,891	**25,764**
2026	2,361	457	2,116	4,802	4,166	11,934	**25,837**
2027	2,362	457	2,121	4,806	4,180	11,970	**25,896**
2028	2,362	456	2,125	4,807	4,191	12,000	**25,942**
2029	2,362	455	2,127	4,807	4,201	12,024	**25,976**
2030	2,360	454	2,129	4,804	4,209	12,041	**25,997**
2031	2,358	453	2,130	4,800	4,214	12,054	**26,009**
2032	2,354	452	2,129	4,795	4,218	12,062	**26,010**
2033	2,350	450	2,128	4,788	4,220	12,065	**26,003**
2034	2,346	449	2,127	4,781	4,222	12,065	**25,990**
2035	2,343	447	2,125	4,773	4,222	12,062	**25,971**
2036	2,338	446	2,122	4,766	4,221	12,056	**25,948**
2037	2,333	444	2,119	4,758	4,219	12,047	**25,921**
2038	2,329	443	2,115	4,749	4,217	12,036	**25,889**
2039	2,324	441	2,112	4,740	4,214	12,023	**25,854**
2040	2,319	440	2,108	4,731	4,210	12,010	**25,817**
2041	2,314	438	2,104	4,723	4,206	11,997	**25,782**
2042	2,310	437	2,100	4,715	4,204	11,986	**25,752**
Average Annual Growth Rates							
Previous 10 Years	-0.14%	-0.14%	-0.14%	-0.14%	-0.14%	-0.14%	**-0.14%**
Previous 5 Years	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%	-0.05%	**-0.05%**
Next 5 Years	0.07%	-0.07%	0.26%	0.09%	0.35%	0.32%	**0.25%**
Next 10 Years	0.00%	-0.15%	0.17%	0.02%	0.27%	0.24%	**0.17%**
Next 20 Years	-0.09%	-0.24%	0.01%	-0.07%	0.12%	0.09%	**0.03%**

The following figure provides the historical and projected Residential consumers.

Residential Consumers



3.1.2 Residential Use per Consumer Forecast

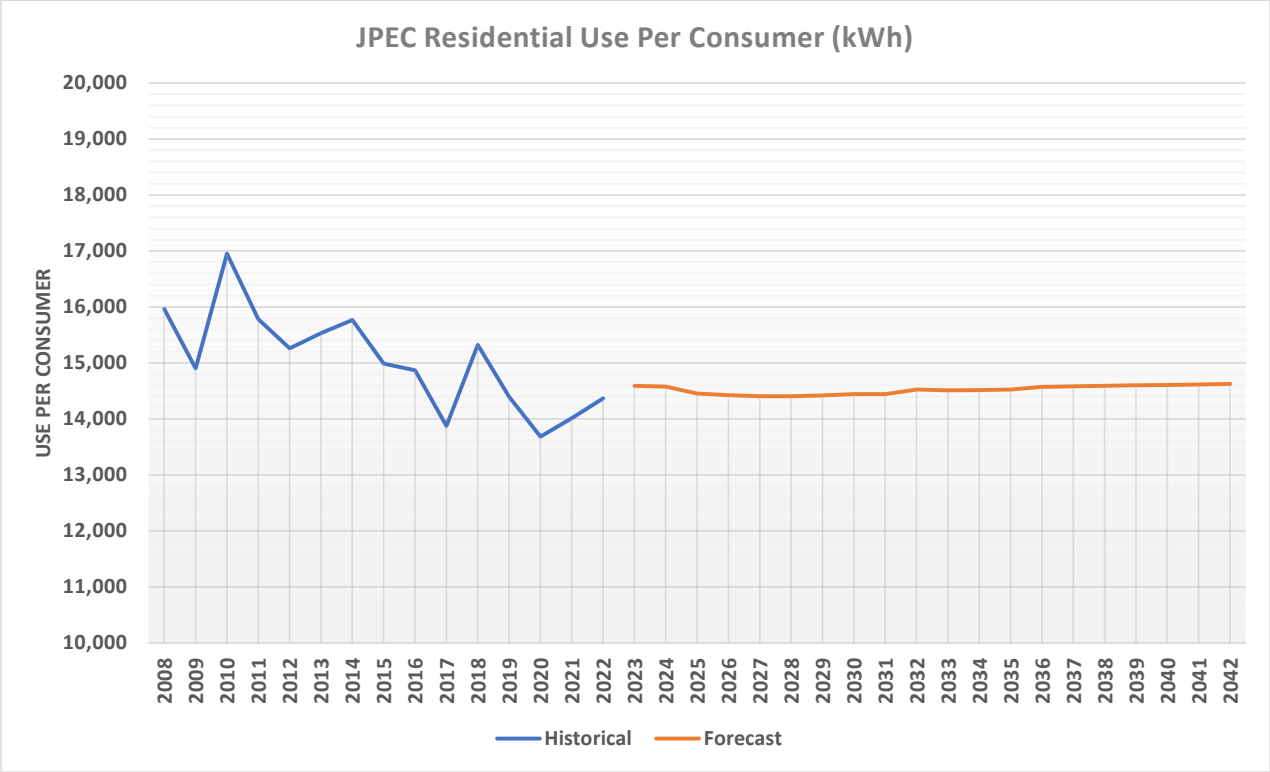
The Residential use per consumer forecast is estimated using an econometric model that relates certain explanatory variables to Residential use per consumer. The model employs a monthly dataset with 192 observations from January 2007 to December 2022. The model uses price of electricity, alternate fuel prices, cooling and heating degree days, appliance saturation levels, and appliance efficiencies. Explanatory variable values are projected in future years using demographic and economic projections and weather normalized values. The Residential use per consumer model is provided in the table below.

Residential Use Per Consumer Model

JPEC Residential Use Per Consumer Model				
Sample: 2007 - 2022 Total Observations: 192				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
January	6.50012	0.053849	120.7103	0
February	6.424839	0.046082	139.4207	0
March	6.432226	0.03445	186.7111	0
April	6.321211	0.028267	223.6233	0
May	6.441712	0.029541	218.0578	0
June	6.549976	0.039385	166.3081	0
July	6.613713	0.045236	146.2039	0
August	6.611691	0.042095	157.0667	0
September	6.526753	0.031866	204.8161	0
October	6.345541	0.029723	213.4862	0
November	6.360766	0.03734	170.3494	0
December	6.495581	0.045505	142.7432	0
Log(Residential Price/Alternate Fuel Price)	-0.093701	0.009515	-9.848174	0
Cooling Degree Days*(AC Saturation)*(1/AC Efficiency)	0.014648	0.001001	14.63427	0
Heating Degree Days*Electric Heat Saturation*(1/Heating Efficiency)	0.01476	0.001164	12.68421	0
Weighted Statistics				
Adjusted R-squared: 0.935468				

The following figure provides the historical and projected Residential use per consumer for JPEC.

Residential Use Per Consumer



3.2 Commercial and Industrial Class

The total commercial and industrial class is divided into three distinct sub classes. Certain large commercial and industrial consumers that are directly served off the transmission system are deemed as Direct Serve consumers and these consumers are individually forecasted based on input from the Member system, Big Rivers, or the Direct Serve consumer itself. The Direct Serve sales are aggregated to the total system requirements separately from the Rural system load. The second commercial and industrial class is the Large C&I (LCI) class. This class consists of the largest commercial and industrial consumers (Direct Serve excluded). The rest of the commercial and industrial retail members are placed and forecasted within the General C&I (GCI) class.

3.2.1 General Commercial and Industrial (GCI) Class

The GCI class is defined as the total commercial and industrial loads minus the Direct Serve and LCI loads. Given the importance of the GCI class, Clearspring Energy used econometric modeling to project both the GCI consumer counts and the GCI use per consumer for JPEC.

The following table provides the last five years of historical data and the next 20 years of forecasted data for the number of GCI customers, GCI use per consumer, and GCI energy sales. Growth rates for the prior 5 and 10 years and projected growth rates for the next 5, 10, and 20 years are provided in the table for GCI consumers, use per consumer, and sales.

Historical and Projected GCI Consumers, Use per Consumer, and Sales

JPEC General C&I Class						
Year	Number of Consumers	% Change per Year in Consumers	Use Per Consumer (kWh)	% Change per Year in Use Per Consumer	Energy Sales (MWh)	% Change per Year in Energy Sales
2018	4,437		46,998		208,524	
2019	4,502	1.48%	43,287	-7.90%	194,897	-6.54%
2020	4,603	2.24%	39,879	-7.87%	183,578	-5.81%
2021	4,731	2.78%	40,501	1.56%	191,622	4.38%
2022	4,849	2.49%	39,978	-1.29%	193,863	1.17%
2023	4,962	2.33%	40,602	1.56%	201,470	3.92%
2024	4,947	-0.31%	40,958	0.88%	202,615	0.57%
2025	4,997	1.01%	40,569	-0.95%	202,708	0.05%
2026	5,057	1.21%	40,539	-0.07%	205,017	1.14%
2027	5,116	1.17%	40,503	-0.09%	207,231	1.08%
2028	5,174	1.13%	40,550	0.11%	209,814	1.25%
2029	5,231	1.10%	40,650	0.25%	212,638	1.35%
2030	5,287	1.07%	40,848	0.49%	215,959	1.56%
2031	5,342	1.05%	40,884	0.09%	218,412	1.14%
2032	5,397	1.02%	41,355	1.15%	223,188	2.19%
2033	5,451	1.01%	41,279	-0.18%	225,024	0.82%
2034	5,505	0.99%	41,317	0.09%	227,465	1.09%
2035	5,559	0.98%	41,387	0.17%	230,085	1.15%
2036	5,613	0.97%	41,627	0.58%	233,671	1.56%
2037	5,668	0.96%	41,657	0.07%	236,093	1.04%
2038	5,722	0.96%	41,667	0.02%	238,410	0.98%
2039	5,776	0.95%	41,674	0.02%	240,721	0.97%
2040	5,831	0.95%	41,649	-0.06%	242,858	0.89%
2041	5,886	0.95%	41,624	-0.06%	245,018	0.89%
2042	5,943	0.95%	41,651	0.06%	247,514	1.02%
Average Annual Growth Rates						
Previous 10 Years	3.99%		-3.70%		0.13%	
Previous 5 Years	2.17%		-3.56%		-1.47%	
Next 5 Years	1.08%		0.26%		1.34%	
Next 10 Years	1.08%		0.34%		1.42%	
Next 20 Years	1.02%		0.21%		1.23%	

3.2.1.1 GCI Consumer Forecast

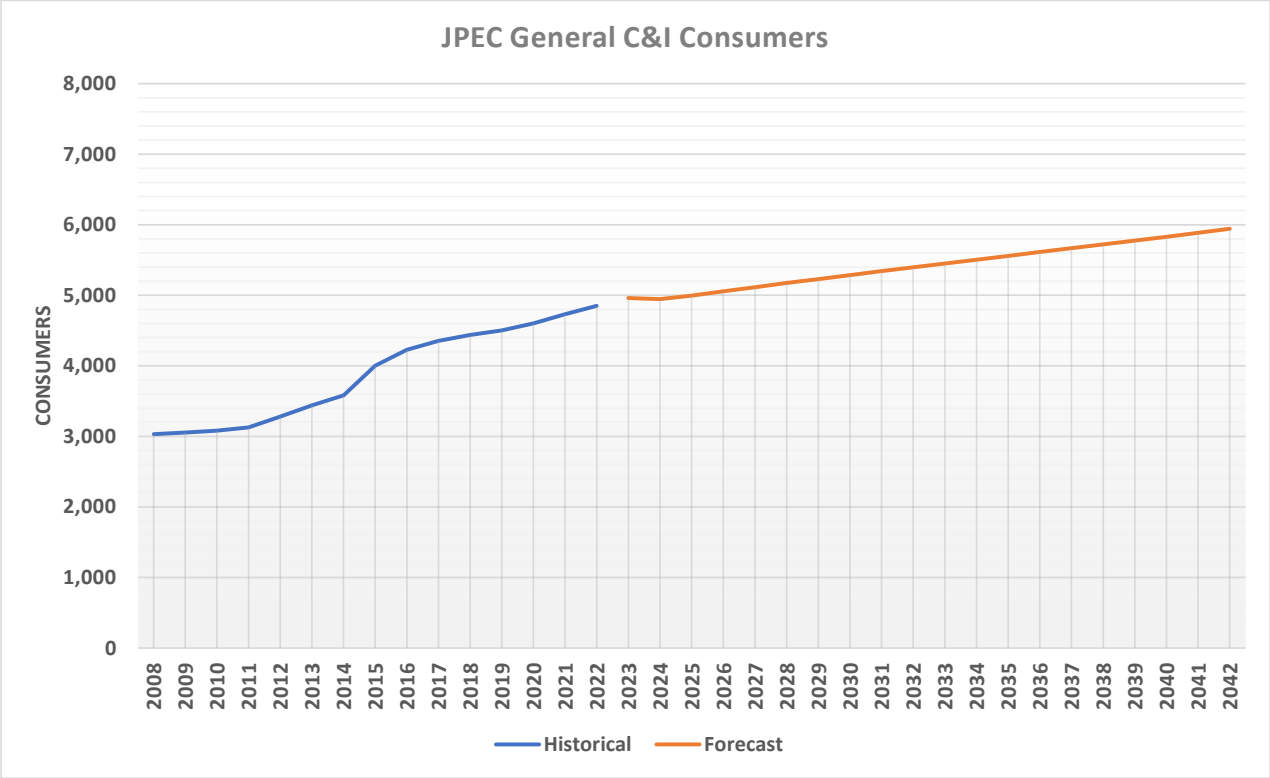
The GCI consumer forecast is estimated using an econometric model that relates explanatory variables to the GCI consumer count. The model uses GRP and total retail sales within the counties served by JPEC. Explanatory variable values are projected in future years using economic projections. Preliminary model results were reviewed by cooperative staff and modifications were made if necessary where staff had specific knowledge of the service territory and conditions. The GCI consumer model is provided in the table below.

GCI Consumer Model

JPEC General C&I Consumer Model				
Sample: 2007 - 2022 Total Observations: 192				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRP	0.782666	0.098542	7.94247	0
Total Retail Sales	3.746979	0.23796	15.74626	0
January 1999 - July 2015	-989.4468	28.5973	-34.5993	0
Weighted Statistics				
Adjusted R-squared: 0.936031				

The following figure provides the historical and projected JPEC GCI consumers.

GCI Consumers



3.2.1.2 GCI Use per Consumer Forecast

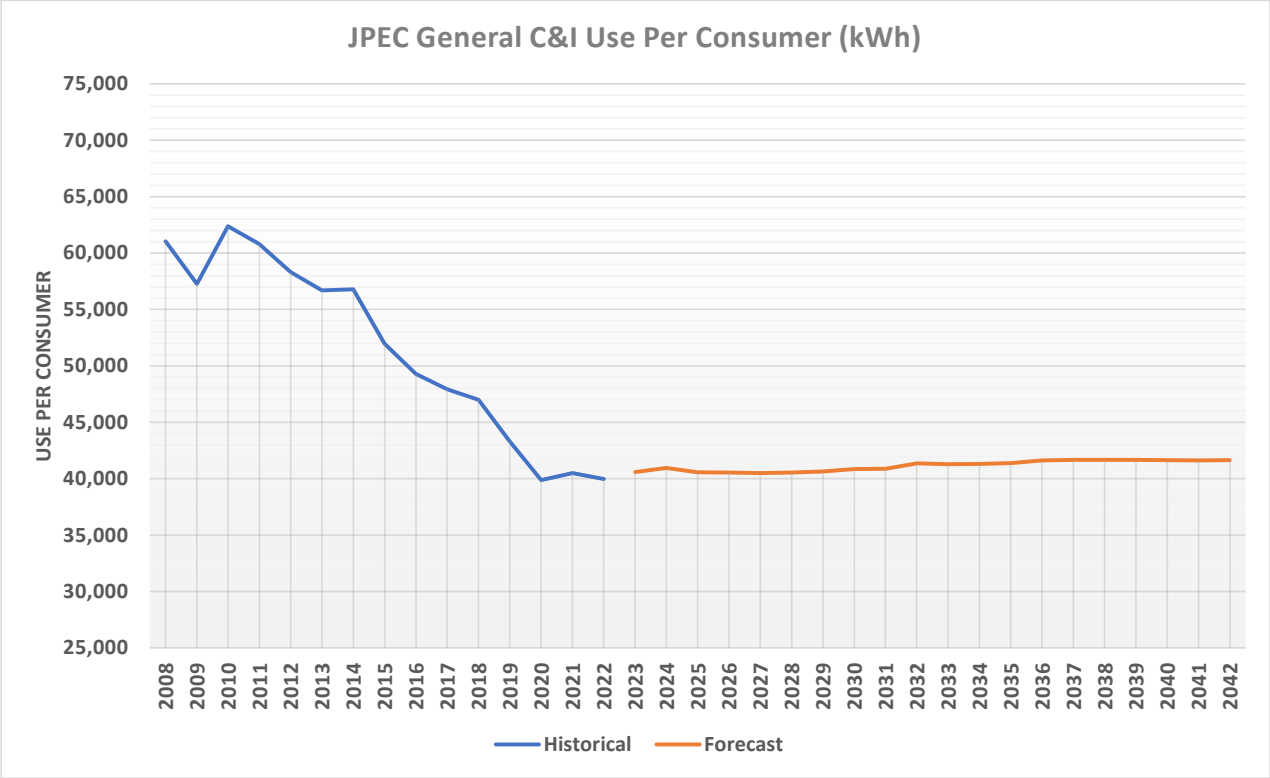
The GCI use per consumer forecast is estimated using an econometric model that relates certain explanatory variables to the GCI use per consumer. The model uses electricity price, employment per consumer, cooling degree days, and heating degree days within the counties served by JPEC. Explanatory variable values are projected in future years using demographic and economic projections and weather normalized values. Preliminary model results were reviewed by cooperative staff and modifications were made if necessary where staff had specific knowledge of the service territory and conditions. The GCI use per consumer model is provided in the table below.

GCI Use per Consumer Model

JPEC General C&I Use Per Consumer Model				
Sample: 1999 - 2022 Total Observations: 288				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
January	8.70329	0.272652	31.92087	0
February	8.629245	0.271437	31.79095	0
March	8.653618	0.267624	32.33501	0
April	8.666321	0.262633	32.9978	0
May	8.733576	0.263235	33.17791	0
June	8.728799	0.261557	33.37239	0
July	8.754806	0.262977	33.29112	0
August	8.76183	0.262092	33.43037	0
September	8.753171	0.260023	33.66312	0
October	8.729997	0.267028	32.69317	0
November	8.681836	0.26909	32.2637	0
December	8.685957	0.271616	31.97883	0
Log(C&I Electricity Price)	-0.173507	0.050016	-3.469004	0.0006
Cooling Degree Days	0.000634	0.0000907	6.995956	0
Heating Degree Days	0.000227	0.0000482	4.702313	0
Log(Total Employment/C&I Consumers)	0.184802	0.036738	5.030221	0
January 1999 - July 2015	0.076907	0.017999	4.272847	0
2019 Forward	-0.145457	0.013339	-10.90443	0
Weighted Statistics				
Adjusted R-squared: 0.876752				

The following figure provides the historical and projected GCI use per consumer for JPEC.

GCI Use per Consumer



3.2.2 Large Commercial and Industrial (LCI) Class

The Large C&I (LCI) class consists of the largest commercial and industrial consumers (Direct Serve excluded). In 2022 the JPEC LCI class contained seven consumers. LCI consumers are projected to expand to eight consumers in 2023 and then drop back down to seven consumers in 2029. The following table provides the last five years of historical data and the next 20 years of forecasted data for the number of LCI consumers, LCI use per consumer, and LCI energy sales. Growth rates for the prior 5 and 10 years and projected growth rates for the next 5, 10, and 20 years are provided in the table for LCI consumers, use per consumer, and sales.

Historical and Projected LCI Consumers, Use per Consumer, and Sales

JPEC Large C&I Class						
Year	Number of Consumers	% Change per Year in Consumers	Use Per Consumer (MWh)	% Change per Year in Use Per Consumer	Energy Sales (MWh)	% Change per Year in Energy Sales
2018	6		6,089,574		36,537	
2019	7	16.67%	5,840,932	-4.08%	40,887	11.90%
2020	7	0.00%	5,833,262	-0.13%	40,833	-0.13%
2021	7	0.00%	5,936,966	1.78%	41,559	1.78%
2022	7	0.00%	5,992,325	0.93%	41,946	0.93%
2023	8	7.14%	6,083,397	1.52%	45,625	8.77%
2024	8	6.67%	6,163,085	1.31%	49,305	8.06%
2025	8	0.00%	6,163,085	0.00%	49,305	0.00%
2026	8	0.00%	6,163,085	0.00%	49,305	0.00%
2027	8	0.00%	6,163,085	0.00%	49,305	0.00%
2028	8	-4.17%	6,111,115	-0.84%	46,852	-4.97%
2029	7	-8.70%	5,992,325	-1.94%	41,946	-10.47%
2030	7	0.00%	5,992,325	0.00%	41,946	0.00%
2031	7	0.00%	5,992,325	0.00%	41,946	0.00%
2032	7	0.00%	5,992,325	0.00%	41,946	0.00%
2033	7	0.00%	5,992,325	0.00%	41,946	0.00%
2034	7	0.00%	5,992,325	0.00%	41,946	0.00%
2035	7	0.00%	5,992,325	0.00%	41,946	0.00%
2036	7	0.00%	5,992,325	0.00%	41,946	0.00%
2037	7	0.00%	5,992,325	0.00%	41,946	0.00%
2038	7	0.00%	5,992,325	0.00%	41,946	0.00%
2039	7	0.00%	5,992,325	0.00%	41,946	0.00%
2040	7	0.00%	5,992,325	0.00%	41,946	0.00%
2041	7	0.00%	5,992,325	0.00%	41,946	0.00%
2042	7	0.00%	5,992,325	0.00%	41,946	0.00%
Average Annual Growth Rates						
Previous 10 Years	-1.83%		1.96%		0.10%	
Previous 5 Years	5.26%		-1.46%		3.72%	
Next 5 Years	2.71%		0.56%		3.29%	
Next 10 Years	0.00%		0.00%		0.00%	
Next 20 Years	0.00%		0.00%		0.00%	

3.2.3 Direct Serve Class

The Direct Serve class contains consumers that are directly served from the transmission system. The sales forecasts are based on manager and staff knowledge and input from each cooperative. JPEC's Direct Serve class contained one consumer in 2022. There are no additional consumers projected to be added to the direct serve class.

The following table provides the last five years of historical data and the next 20 years of forecasted data for the number of Direct Serve customers, Direct Serve use per consumer, and Direct Serve energy sales. Growth rates for the prior 5 and 10 years and projected growth rates for the next 5, 10, and 20 years are provided in the table for Direct Serve consumers, use per consumer, and sales.

Historical and Projected Direct Serve Consumers, Use per Consumer, and Sales

JPEC Direct Serve Class						
Year	Number of Consumers	% Change per Year in Consumers	Use Per Consumer (MWh)	% Change per Year in Use Per Consumer	Energy Sales (MWh)	% Change per Year in Energy Sales
2018	1		866		866	
2019	1	0.00%	390	-54.93%	390	-54.93%
2020	1	-50.00%	72	-81.45%	36	-90.72%
2021	0	-100.00%	0	-100.00%	0	-100.00%
2022	1		180,311		165,285	
2023	1	9.09%	226,800	25.78%	226,800	37.22%
2024	1	0.00%	239,301	5.51%	239,301	5.51%
2025	1	0.00%	239,301	0.00%	239,301	0.00%
2026	1	0.00%	239,301	0.00%	239,301	0.00%
2027	1	0.00%	239,301	0.00%	239,301	0.00%
2028	1	0.00%	239,301	0.00%	239,301	0.00%
2029	1	0.00%	239,301	0.00%	239,301	0.00%
2030	1	0.00%	239,301	0.00%	239,301	0.00%
2031	1	0.00%	239,301	0.00%	239,301	0.00%
2032	1	0.00%	239,301	0.00%	239,301	0.00%
2033	1	0.00%	239,301	0.00%	239,301	0.00%
2034	1	0.00%	239,301	0.00%	239,301	0.00%
2035	1	0.00%	239,301	0.00%	239,301	0.00%
2036	1	0.00%	239,301	0.00%	239,301	0.00%
2037	1	0.00%	239,301	0.00%	239,301	0.00%
2038	1	0.00%	239,301	0.00%	239,301	0.00%
2039	1	0.00%	239,301	0.00%	239,301	0.00%
2040	1	0.00%	239,301	0.00%	239,301	0.00%
2041	1	0.00%	239,301	0.00%	239,301	0.00%
2042	1	0.00%	239,301	0.00%	239,301	0.00%
Average Annual Growth Rates						
Previous 10 Years	-0.87%		42.41%		41.17%	
Previous 5 Years	-1.73%		103.59%		100.07%	
Next 5 Years	1.76%		5.82%		7.68%	
Next 10 Years	0.87%		2.87%		3.77%	
Next 20 Years	0.44%		1.43%		1.87%	

3.3 Street and Highway Class

Given the small proportion of the Street and Highway class in total sales, the forecast for this class was calculated manually rather than through econometric modeling. The most recent consumer values were held constant through the forecast and the prior twelve months of usage were used to derive monthly energy forecasts for the forecast period.

The following table provides the last five years of historical data and the next 20 years of forecasted data for the number of Street and Highway consumers, Street and Highway use per consumer, and Street and Highway energy sales. Growth rates for the prior 5 and 10 years and projected growth rates for the next 5, 10, and 20 years are provided in the table for Street and Highway consumers, use per consumer, and sales.

Historical and Projected Street & Highway Consumers, Use per Consumer, and Sales

JPEC Street & Highway Class						
Year	Number of Consumers	% Change per Year in Consumers	Use Per Consumer (kWh)	% Change per Year in Use Per Consumer	Energy Sales (MWh)	% Change per Year in Energy Sales
2018	6		111,140		621	
2019	7	22.39%	88,356	-20.50%	604	-2.70%
2020	11	60.98%	58,821	-33.43%	647	7.17%
2021	18	62.12%	36,126	-38.58%	644	-0.43%
2022	22	24.30%	30,768	-14.83%	682	5.86%
2023	23	3.76%	30,872	0.34%	710	4.11%
2024	23	0.00%	30,872	0.00%	710	0.00%
2025	23	0.00%	30,872	0.00%	710	0.00%
2026	23	0.00%	30,872	0.00%	710	0.00%
2027	23	0.00%	30,872	0.00%	710	0.00%
2028	23	0.00%	30,872	0.00%	710	0.00%
2029	23	0.00%	30,872	0.00%	710	0.00%
2030	23	0.00%	30,872	0.00%	710	0.00%
2031	23	0.00%	30,872	0.00%	710	0.00%
2032	23	0.00%	30,872	0.00%	710	0.00%
2033	23	0.00%	30,872	0.00%	710	0.00%
2034	23	0.00%	30,872	0.00%	710	0.00%
2035	23	0.00%	30,872	0.00%	710	0.00%
2036	23	0.00%	30,872	0.00%	710	0.00%
2037	23	0.00%	30,872	0.00%	710	0.00%
2038	23	0.00%	30,872	0.00%	710	0.00%
2039	23	0.00%	30,872	0.00%	710	0.00%
2040	23	0.00%	30,872	0.00%	710	0.00%
2041	23	0.00%	30,872	0.00%	710	0.00%
2042	23	0.00%	30,872	0.00%	710	0.00%
Average Annual Growth Rates						
Previous 10 Years	22.14%		-17.29%		1.03%	
Previous 5 Years	37.56%		-26.09%		1.67%	
Next 5 Years	0.74%		0.07%		0.81%	
Next 10 Years	0.37%		0.03%		0.40%	
Next 20 Years	0.18%		0.02%		0.20%	

3.4 Irrigation Class

Given the small proportion of the Irrigation class in total sales, the forecast for this class was calculated manually rather than through econometric modeling. The most recent consumer values were held constant through the forecast and the prior four years of usage were used to derive monthly energy forecasts for the forecast period.

The following table provides the last five years of historical data and the next 20 years of forecasted data for the number of Irrigation customers, Irrigation use per consumer, and Irrigation energy sales. Growth rates for the prior 5 and 10 years and projected growth rates for the next 5, 10, and 20 years are provided in the table for Irrigation consumers, use per consumer, and sales.

Historical and Projected Irrigation Consumers, Use per Consumer, and Sales

JPEC Irrigation Class						
Year	Number of Consumers	% Change per Year in Consumers	Use Per Consumer (kWh)	% Change per Year in Use Per Consumer	Energy Sales (MWh)	% Change per Year in Energy Sales
2018	5		15,618		70	
2019	5	11.11%	22,742	45.61%	114	61.79%
2020	5	0.00%	10,043	-55.84%	50	-55.84%
2021	5	0.00%	16,704	66.33%	84	66.33%
2022	5	0.00%	26,082	56.14%	130	56.14%
2023	5	0.00%	18,625	-28.59%	93	-28.59%
2024	5	0.00%	18,625	0.00%	93	0.00%
2025	5	0.00%	18,625	0.00%	93	0.00%
2026	5	0.00%	18,625	0.00%	93	0.00%
2027	5	0.00%	18,625	0.00%	93	0.00%
2028	5	0.00%	18,625	0.00%	93	0.00%
2029	5	0.00%	18,625	0.00%	93	0.00%
2030	5	0.00%	18,625	0.00%	93	0.00%
2031	5	0.00%	18,625	0.00%	93	0.00%
2032	5	0.00%	18,625	0.00%	93	0.00%
2033	5	0.00%	18,625	0.00%	93	0.00%
2034	5	0.00%	18,625	0.00%	93	0.00%
2035	5	0.00%	18,625	0.00%	93	0.00%
2036	5	0.00%	18,625	0.00%	93	0.00%
2037	5	0.00%	18,625	0.00%	93	0.00%
2038	5	0.00%	18,625	0.00%	93	0.00%
2039	5	0.00%	18,625	0.00%	93	0.00%
2040	5	0.00%	18,625	0.00%	93	0.00%
2041	5	0.00%	18,625	0.00%	93	0.00%
2042	5	0.00%	18,625	0.00%	93	0.00%
Average Annual Growth Rates						
Previous 10 Years	0.00%		-11.46%		-11.46%	
Previous 5 Years	4.56%		0.50%		5.09%	
Next 5 Years	0.00%		-6.51%		-6.51%	
Next 10 Years	0.00%		-3.31%		-3.31%	
Next 20 Years	0.00%		-1.67%		-1.67%	

3.5 Total Energy

The total energy requirements are calculated by taking the sales forecasts for each class, detailed in the previous sections of this report, and adding distribution losses and own use. Distribution losses are estimated using a three-year historical average percent. This percent is computed after any Direct Sale loads are removed since these loads are no loss loads.

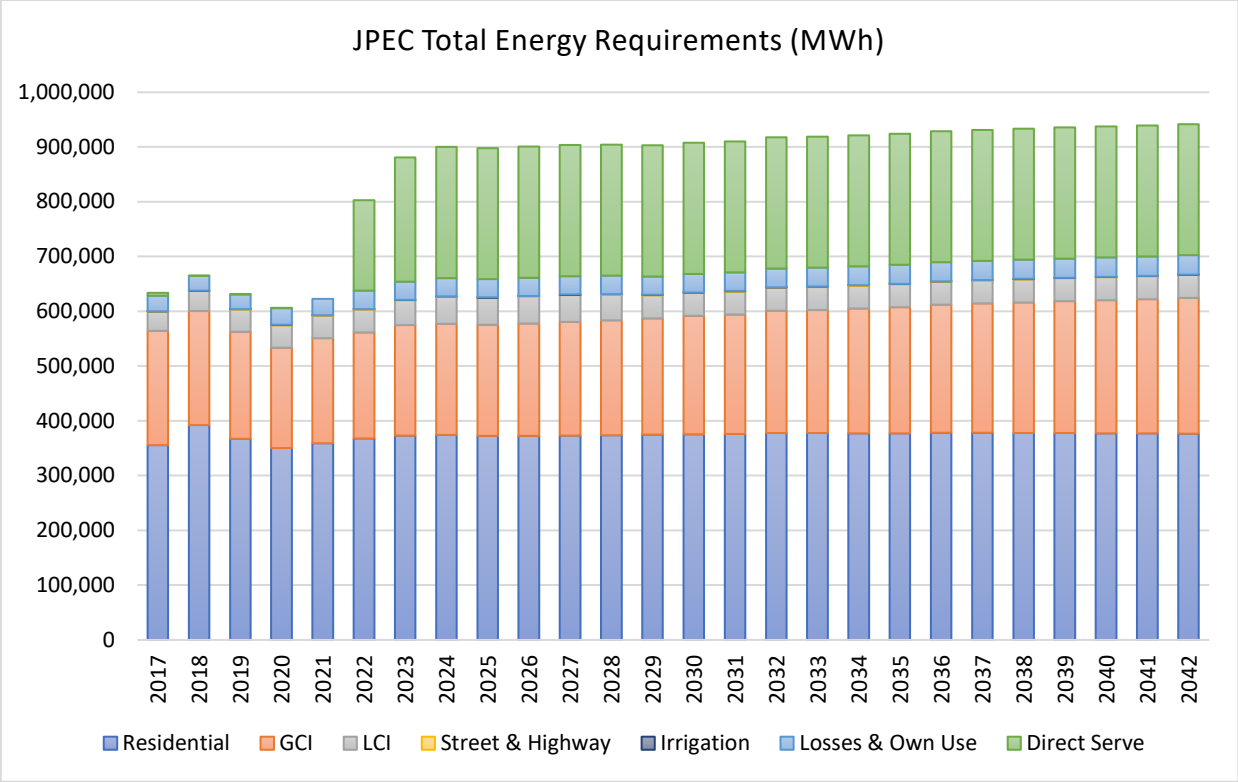
The following table provides the historical and forecast components of total energy requirements. The last five historical years are provided (2018 to 2022) along with the next twenty years of forecasts for each component. This includes Rural energy sales, Direct Serve sales, and line losses. It is assumed that any impacts of prior DSM programs are captured indirectly through the historical energy and peak data used as an input to the modeling process. For the base case forecast the additional DSM impact has been set to zero. An alternate scenario has been quantified for Big Rivers and provided in Excel that detail the impacts of a one million annual DSM spending scenario. This scenario impact is derived directly from the Big Rivers DSM study completed in 2023.

Total System Energy Summary

JPEC Total System Energy Summary					
Year	Rural System Energy Sales (MWh)	Direct Serve Energy Sales (MWh)	Total System Energy Sales (MWh)	Line Losses (% of Rural Energy)	Total Energy Requirements (MWh)
2018	637,691	866	638,557	3.99%	665,271
2019	603,796	390	604,186	4.25%	631,177
2020	575,103	36	575,139	4.97%	605,367
2021	592,906	0	592,906	4.58%	622,286
2022	604,071	165,285	769,356	5.07%	802,936
2023	621,037	226,800	847,837	4.87%	880,955
2024	627,068	239,301	866,369	4.87%	899,800
2025	625,225	239,301	864,526	4.87%	897,869
2026	627,773	239,301	867,074	4.87%	900,553
2027	630,436	239,301	869,737	4.87%	903,357
2028	631,166	239,301	870,467	4.87%	904,130
2029	629,980	239,301	869,281	4.87%	902,887
2030	634,265	239,301	873,565	4.87%	907,394
2031	636,884	239,301	876,185	4.87%	910,150
2032	643,794	239,301	883,095	4.87%	917,417
2033	645,141	239,301	884,442	4.87%	918,834
2034	647,506	239,301	886,807	4.87%	921,323
2035	650,097	239,301	889,398	4.87%	924,048
2036	654,552	239,301	893,853	4.87%	928,732
2037	656,895	239,301	896,196	4.87%	931,196
2038	658,985	239,301	898,286	4.87%	933,394
2039	660,998	239,301	900,299	4.87%	935,511
2040	662,751	239,301	902,052	4.87%	937,354
2041	664,574	239,301	903,875	4.87%	939,272
2042	666,891	239,301	906,192	4.87%	941,709
Average Annual Growth Rates					
Previous 10 Years	-0.41%	41.17%	1.94%	-0.02%	1.84%
Previous 5 Years	0.13%	100.07%	4.92%	2.49%	4.85%
Next 5 Years	0.86%	7.68%	2.48%	-0.80%	2.38%
Next 10 Years	0.64%	3.77%	1.39%	-0.40%	1.34%
Next 20 Years	0.50%	1.87%	0.82%	-0.20%	0.80%

The following graph provides the class components that comprise the total energy requirements for JPEC.

Total Energy Forecast



4 PEAK DEMAND

4.1 COINCIDENT PEAK DEMAND

The Rural system coincident peak demand (Rural CP) is measured based on JPEC's demand coincident with the Big Rivers' total system peak. Clearspring Energy econometrically modeled JPEC's Rural coincident load factor using a monthly dataset. The predicted load factor is combined with the Rural energy forecast to forecast the Rural coincident peak demand. The Rural load factor model uses temperature on the peak day each month, cooling degree days, heating degree days, appliance saturations, and appliance efficiencies. The Rural CP load factor model is provided in the table below.

Rural CP Load Factor Model

JPEC Load Factor Model				
Sample: 2007 - 2022 Total Observations: 192				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
January	0.659135	0.038221	17.24524	0
February	0.694448	0.03032	22.90415	0
March	0.676344	0.028803	23.48166	0
April Cold Peaking	0.705439	0.020673	34.12325	0
April Hot Peaking	0.654156	0.021337	30.65783	0
May	0.592177	0.017158	34.51349	0
June	0.60758	0.023881	25.44169	0
July	0.602278	0.025044	24.04883	0
August	0.587836	0.024952	23.55824	0
September	0.602414	0.022121	27.23264	0
October Cold Peaking	0.738494	0.029593	24.95536	0
October Hot Peaking	0.624062	0.024917	25.04524	0
November	0.688301	0.028675	24.00356	0
December	0.691394	0.033179	20.83827	0
Cooling Degree Days on Peak Day*(AC Saturation)*(1/AC Efficiency)	-0.089863	0.01648	-5.452801	0
Heating Degree Days on Peak Day*Electric Heating Saturation*(1/Heating Efficiency)	-0.09496	0.018234	-5.20796	0
Cooling Degree During Remainder of Month*(AC Saturation)*(1/AC Efficiency)	0.005366	0.000701	7.652608	0
Heating Degree During Remainder of Month*Electric Heating Saturation*(1/Heating Efficiency)	0.005294	0.000881	6.011511	0
Weighted Statistics				
Adjusted R-squared: 0.615507				

The following table provides the last five years of historical data and the next 20 years of forecasted data for the winter, summer, and annual peaks for JPEC's Rural system. The table also provides the annual coincident peak contribution for the Direct Serve class and the total JPEC coincident peak contribution. The Direct Serve coincident peak contribution was forecasted using three months of historical values for the class. Growth rates for the prior 5 and 10 years and projected growth rates for the next 5, 10, and 20 years are provided in the table below.

Historical and Projected CP Demands

JPEC Coincident Peak (kW)					
Year	Rural Summer CP	Rural Winter CP	Rural Annual CP	Direct Serve Annual CP	**Total Annual CP**
2018	145,856	145,041	145,041	38	**145,079**
2019	138,722	123,172	123,172	32	**123,205**
2020	134,560	117,748	134,560	0	**134,560**
2021	141,100	143,176	143,176	0	**143,176**
2022	145,809	151,269	151,269	16,386	**167,655**
2023	137,639	118,754	137,639	25,713	**163,352**
2024	137,999	132,183	137,999	27,130	**165,129**
2025	137,596	131,476	137,596	27,130	**164,726**
2026	138,085	131,856	138,085	27,130	**165,215**
2027	138,613	132,262	138,613	27,130	**165,743**
2028	139,267	132,769	139,267	27,130	**166,397**
2029	138,678	132,122	138,678	27,130	**165,808**
2030	139,585	132,848	139,585	27,130	**166,715**
2031	140,134	133,237	140,134	27,130	**167,264**
2032	141,634	134,498	141,634	27,130	**168,764**
2033	141,903	134,640	141,903	27,130	**169,033**
2034	142,399	134,991	142,399	27,130	**169,529**
2035	142,942	135,393	142,942	27,130	**170,072**
2036	143,896	136,188	143,896	27,130	**171,026**
2037	144,377	136,577	144,377	27,130	**171,507**
2038	144,799	136,917	144,799	27,130	**171,929**
2039	145,202	137,247	145,202	27,130	**172,332**
2040	145,543	137,531	145,543	27,130	**172,673**
2041	145,901	137,824	145,901	27,130	**173,031**
2042	146,367	138,220	146,367	27,130	**173,497**
Average Annual Growth Rates					
Previous 10 Years	-0.84%	1.91%	-0.47%	94.09%	**0.56%**
Previous 5 Years	-0.42%	2.94%	0.32%	299.02%	**2.40%**
Next 5 Years	-1.01%	-2.65%	-1.73%	10.61%	**-0.23%**
Next 10 Years	-0.29%	-1.17%	-0.66%	5.17%	**0.07%**
Next 20 Years	0.02%	-0.45%	-0.16%	2.55%	**0.17%**

4.2 Non-Coincident Peak Demand

Rural NCP is forecasted monthly using an average of historical coincident factors examining the ratio between past coincident and non-coincident peaks. The Rural NCP value represents the single highest cooperative Rural load amount of the year regardless of the time it occurred. Direct Serve NCP is also forecasted using judgement and input from cooperative staff. The following table provides the last five years of historical data and the next 20 years of forecasted data for the total CP, Rural NCP, and Direct Serve NCP for JPEC's total system. Growth rates for the prior 5 years and projected growth rates for the next 5, 10, and 20 years are also provided in the table below.

Historical and Projected Demands

JPEC Peak (kW)						
Year	Total CP	% Change per Year in Total CP	Rural NCP	% Change per Year in Rural NCP	Direct Serve NCP	% Change per Year in Direct Serve NCP
2018	145,079		146,742		1,793	-43.05%
2019	123,205	-15.08%	139,022	-5.26%	1,733	-3.31%
2020	134,560	9.22%	137,225	-1.29%	32	-98.13%
2021	143,176	6.40%	143,176	4.34%	0	-100.00%
2022	167,655	17.10%	152,695	6.65%	30,984	
2023	163,352	-2.57%	142,939	-6.39%	27,794	-10.30%
2024	165,129	1.09%	143,380	0.31%	29,325	5.51%
2025	164,726	-0.24%	142,981	-0.28%	29,325	0.00%
2026	165,215	0.30%	143,504	0.37%	29,325	0.00%
2027	165,743	0.32%	144,066	0.39%	29,325	0.00%
2028	166,397	0.39%	144,756	0.48%	29,325	0.00%
2029	165,808	-0.35%	144,119	-0.44%	29,325	0.00%
2030	166,715	0.55%	145,073	0.66%	29,325	0.00%
2031	167,264	0.33%	145,655	0.40%	29,325	0.00%
2032	168,764	0.90%	147,222	1.08%	29,325	0.00%
2033	169,033	0.16%	147,516	0.20%	29,325	0.00%
2034	169,529	0.29%	148,045	0.36%	29,325	0.00%
2035	170,072	0.32%	148,622	0.39%	29,325	0.00%
2036	171,026	0.56%	149,625	0.68%	29,325	0.00%
2037	171,507	0.28%	150,139	0.34%	29,325	0.00%
2038	171,929	0.25%	150,592	0.30%	29,325	0.00%
2039	172,332	0.23%	151,026	0.29%	29,325	0.00%
2040	172,673	0.20%	151,398	0.25%	29,325	0.00%
2041	173,031	0.21%	151,789	0.26%	29,325	0.00%
2042	173,497	0.27%	152,292	0.33%	29,325	0.00%
Average Annual Growth Rates						
Previous 10 Years	0.56%		-0.45%		31.19%	
Previous 5 Years	2.40%		0.50%		57.98%	
Next 5 Years	-0.23%		-1.16%		-1.09%	
Next 10 Years	0.07%		-0.36%		-0.55%	
Next 20 Years	0.17%		-0.01%		-0.27%	

5 ALTERNATIVE SYSTEM FORECASTS AND UNCERTAINTY ANALYSIS

While the projections summarized in previous sections should be viewed as the most probable outcome, it is important to remember that energy loads can be influenced by factors that are inherently difficult to predict, such as weather and the economy. Forecasting attempts to model reality and identify the primary drivers of growth and change. However, due to the unpredictable nature of these drivers, the base case forecast is unlikely to be fully accurate. Therefore, it is important to develop flexible plans for meeting future energy needs based on a range of forecast outcomes.

The study includes scenario analyses that show how the forecasts change under assumed variations in future weather and economic growth paths. The alternate growth scenarios that have been explored are:

1. Extreme weather with normal economic growth
2. Mild weather with normal economic growth
3. High economic growth with normal weather
4. Low economic growth with normal weather

5.1 WEATHER SCENARIOS

Weather is one of the critical components to explain year-to-year variation in load. Because of this, extreme and mild weather scenarios were developed for the forecast period. The Residential use per consumer and GCI use per consumer monthly energy models use cooling degree days and heating degree days. For the creation of the mild and extreme energy scenarios these two variables were altered to a twenty-year historical annual maximum and minimum value. These annual extremes were then redistributed across each month based on an average monthly distribution of cooling degree days and heating degree days.

The Rural peak load factor model also contains cooling degree days and heating degree days for the month. Additionally, the load factor model captures peak day weather conditions. The extreme

and mild weather scenarios alter the load factor model to use monthly weather conditions consistent with the energy models and change the peak day conditions to the most extreme or mild found in the last twenty years of history for each given month. The peak values displayed are a maximum of each monthly scenario value for the given season and therefore can occur in a different month than the base case forecast. Forecasts are provided in Excel that detail each scenario by month.

The following table provides the last five years of historical data and the next 20 years of forecasted data for the mild, base, and extreme weather scenarios. The forecasts are for the Rural system.

Rural System Weather Scenarios

JPEC Rural System Weather Scenarios									
Year	Energy (MWh)			Winter CP Demand (kW)			Summer CP Demand (kW)		
	Mild	Base	Extreme	Mild	Base	Extreme	Mild	Base	Extreme
2018		664,405			145,041			145,856	
2019		630,787			123,172			138,722	
2020		605,330			117,748			134,560	
2021		622,286			143,176			141,100	
2022		637,651			151,269			145,809	
2023	615,668	654,155	696,532	103,791	118,754	144,307	125,273	137,639	155,565
2024	622,267	660,499	702,549	119,610	132,183	144,597	125,735	137,999	155,740
2025	620,850	658,568	700,012	119,082	131,476	150,437	125,501	137,596	155,060
2026	623,759	661,252	702,410	119,543	131,856	150,623	126,065	138,085	155,412
2027	626,746	664,056	704,978	120,019	132,262	150,855	126,652	138,613	155,829
2028	627,649	664,829	705,575	120,582	132,769	143,033	127,344	139,267	156,405
2029	626,482	663,586	704,220	119,999	132,122	150,142	126,773	138,678	155,738
2030	631,020	668,093	708,666	120,753	132,848	150,782	127,682	139,585	156,626
2031	633,879	670,850	711,287	121,193	133,237	151,054	128,253	140,134	157,127
2032	640,990	678,116	718,700	122,426	134,498	145,497	129,690	141,634	158,705
2033	642,543	679,533	719,950	122,629	134,640	152,346	129,991	141,903	158,915
2034	645,093	682,022	722,354	123,017	134,991	152,616	130,495	142,399	159,390
2035	647,850	684,747	725,030	123,445	135,393	152,961	131,037	142,942	159,926
2036	652,438	689,431	729,806	124,225	136,188	146,819	131,950	143,896	160,934
2037	654,896	691,895	732,267	124,623	136,577	154,144	132,421	144,377	161,425
2038	657,100	694,093	734,450	124,974	136,917	154,464	132,837	144,799	161,850
2039	659,222	696,210	736,552	125,314	137,247	154,779	133,235	145,202	162,256
2040	661,078	698,054	738,374	125,609	137,531	147,998	133,575	145,543	162,594
2041	662,997	699,971	740,282	125,910	137,824	155,334	133,930	145,901	162,955
2042	665,404	702,408	742,744	126,303	138,220	155,743	134,381	146,367	163,439

Direct Serve load is assumed to not be influenced by weather and is held constant to the base case forecast for the weather ranges. The extreme and mild ranges with the Direct Serve class included are shown below.

Total System Weather Scenarios

JPEC Total System Weather Scenarios									
Year	Energy (MWh)			Winter CP Demand (kW)			Summer CP Demand (kW)		
	Mild	Base	Extreme	Mild	Base	Extreme	Mild	Base	Extreme
2018		665,271			145,079			145,878	
2019		631,177			123,205			138,738	
2020		605,367			117,764			134,560	
2021		622,286			143,176			141,100	
2022		802,936			167,655			171,103	
2023	842,468	880,955	923,332	129,504	144,467	170,020	150,985	163,352	181,278
2024	861,568	899,800	941,850	146,739	159,313	171,727	152,864	165,129	182,870
2025	860,150	897,869	939,312	146,212	158,606	177,566	152,631	164,726	182,190
2026	863,060	900,553	941,711	146,673	158,986	177,753	153,195	165,215	182,541
2027	866,047	903,357	944,279	147,149	159,392	177,985	153,782	165,743	182,959
2028	866,950	904,130	944,876	147,712	159,899	170,163	154,474	166,397	183,535
2029	865,783	902,887	943,521	147,129	159,252	177,272	153,903	165,808	182,868
2030	870,321	907,394	947,967	147,883	159,978	177,912	154,812	166,715	183,756
2031	873,180	910,150	950,588	148,323	160,367	178,184	155,383	167,264	184,257
2032	880,291	917,417	958,001	149,556	161,628	172,627	156,819	168,764	185,835
2033	881,844	918,834	959,251	149,759	161,770	179,476	157,121	169,033	186,045
2034	884,394	921,323	961,655	150,147	162,121	179,746	157,625	169,529	186,520
2035	887,151	924,048	964,331	150,575	162,523	180,091	158,167	170,072	187,056
2036	891,739	928,732	969,107	151,355	163,318	173,949	159,079	171,026	188,064
2037	894,197	931,196	971,568	151,753	163,707	181,274	159,551	171,507	188,555
2038	896,400	933,394	973,751	152,104	164,047	181,594	159,967	171,929	188,980
2039	898,523	935,511	975,853	152,444	164,377	181,909	160,365	172,332	189,386
2040	900,379	937,354	977,675	152,739	164,661	175,128	160,705	172,673	189,724
2041	902,298	939,272	979,583	153,040	164,954	182,464	161,060	173,031	190,085
2042	904,705	941,709	982,045	153,433	165,350	182,873	161,511	173,497	190,569

5.2 Economic Scenarios

Another critical component of a long-term load forecast is the underlying economic variables within the service territory. Two scenarios have been developed: low economic growth and high economic growth. To create the economic scenarios, economic variables within each econometrically modeled class are altered by an additional plus or minus 1.0% in 2023. As the forecast is projected further into the future, the variable values deviate by an additional 1.0% each additional year relative to the base case forecast (variable values in 2042 are +/- 20% of the base case forecast values). The altered variables include electricity price, GRP, employment, and total retail sales.

The forecast for Residential consumers, LCI, Irrigation, and Street and Highway are not modeled econometrically and are therefore directly modified by 1.0% per year relative to the base case forecast to create the high and low economic ranges.

The following table provides the last five years of historical data and the next 20 years of forecasted data for the low, base, and high economic scenarios.

Rural System Economic Scenarios

JPEC Rural System Economic Scenarios									
Year	Energy (MWh)			Winter CP Demand (kW)			Summer CP Demand (kW)		
	Low	Base	High	Low	Base	High	Low	Base	High
2018		664,405			145,041			145,856	
2019		630,787			123,172			138,722	
2020		605,330			117,748			134,560	
2021		622,286			143,176			141,100	
2022		637,651			151,269			145,809	
2023	650,273	654,155	658,046	117,448	118,754	120,063	136,752	137,639	138,527
2024	649,329	660,499	671,726	130,611	132,183	133,761	135,591	137,999	140,420
2025	640,215	658,568	677,070	128,474	131,476	134,497	133,684	137,596	141,540
2026	635,605	661,252	687,190	127,408	131,856	136,347	132,648	138,085	143,584
2027	631,075	664,056	697,517	126,363	132,262	138,237	131,643	138,613	145,686
2028	624,595	664,829	705,780	125,408	132,769	140,246	130,748	139,267	147,939
2029	616,213	663,586	711,966	123,363	132,122	141,049	128,682	138,678	148,888
2030	613,195	668,093	724,343	122,610	132,848	143,316	128,013	139,585	151,445
2031	608,516	670,850	734,928	121,538	133,237	145,237	127,004	140,134	153,635
2032	607,837	678,116	750,604	121,247	134,498	148,134	126,838	141,634	156,900
2033	601,853	679,533	759,921	119,939	134,640	149,818	125,556	141,903	158,825
2034	596,798	682,022	770,513	118,815	134,991	151,745	124,470	142,399	161,021
2035	591,918	684,747	781,459	117,732	135,393	153,744	123,420	142,942	163,288
2036	588,668	689,431	794,769	116,983	136,188	156,211	122,711	143,896	166,052
2037	583,473	691,895	805,626	115,877	136,577	158,231	121,588	144,377	168,292
2038	578,027	694,093	816,260	114,726	136,917	160,207	120,409	144,799	170,482
2039	572,486	696,210	826,888	113,564	137,247	162,186	119,209	145,202	172,668
2040	566,701	698,054	837,273	112,362	137,531	164,124	117,954	145,543	174,797
2041	560,956	699,971	847,827	111,166	137,824	166,087	116,711	145,901	176,964
2042	555,596	702,408	859,108	110,049	138,220	168,190	115,546	146,367	179,281

The Direct Serve class is not modeled using econometric modeling. As such, the load is increased by an additional 1.0% per year relative to the base case in the high scenario. In the low scenario the Direct Serve class is decreased by 1.0% per year relative to the base case. The high and low ranges with the Direct Serve class included are shown below.

Total System Economic Scenarios

Big Rivers Total System Economic Scenarios									
Year	Energy (MWh)			Winter CP Demand (kW)			Summer CP Demand (kW)		
	Low	Base	High	Low	Base	High	Low	Base	High
2018		665,271			145,079			145,878	
2019		631,177			123,205			138,738	
2020		605,367			117,764			134,560	
2021		622,286			143,176			141,100	
2022		802,936			167,655			171,103	
2023	875,844	880,955	886,075	142,904	144,467	146,033	162,315	163,352	164,390
2024	884,940	899,800	914,716	157,447	159,313	161,185	162,291	165,129	167,979
2025	873,433	897,869	922,453	155,039	158,606	162,192	160,113	164,726	169,371
2026	866,431	900,553	934,966	153,701	158,986	164,313	158,806	165,215	171,687
2027	859,508	903,357	947,686	152,385	159,392	166,474	157,529	165,743	174,060
2028	850,635	904,130	958,342	151,159	159,899	168,755	156,364	166,397	176,583
2029	839,860	902,887	966,921	148,843	159,252	169,829	154,026	165,808	177,804
2030	834,448	907,394	981,691	147,818	159,978	172,368	153,086	166,715	180,632
2031	827,376	910,150	994,670	146,475	160,367	174,560	151,805	167,264	183,094
2032	824,305	917,417	1,012,738	145,913	161,628	177,728	151,368	168,764	186,630
2033	815,928	918,834	1,024,449	144,333	161,770	179,684	149,814	169,033	188,826
2034	808,479	921,323	1,037,433	142,938	162,121	181,882	148,458	169,529	191,293
2035	801,207	924,048	1,050,773	141,584	162,523	184,152	147,136	170,072	193,832
2036	795,563	928,732	1,066,475	140,563	163,318	186,891	146,155	171,026	196,867
2037	787,975	931,196	1,079,726	139,186	163,707	189,181	144,761	171,507	199,379
2038	780,137	933,394	1,092,752	137,764	164,047	191,429	143,312	171,929	201,840
2039	772,203	935,511	1,105,773	136,331	164,377	193,680	141,840	172,332	204,297
2040	764,024	937,354	1,118,551	134,857	164,661	195,888	140,314	172,673	206,697
2041	755,887	939,272	1,131,498	133,390	164,954	198,123	138,799	173,031	209,135
2042	748,133	941,709	1,145,173	132,001	165,350	200,497	137,363	173,497	211,724

6 WEATHER NORMALIZED VALUES

Weather-sensitive electricity loads comprise a large portion of electricity end-uses. Weather conditions vary and will cause electricity sales and peak demands to increase during more extreme periods or decrease during milder periods. In this section, we provide estimates of energy and peak demands for JPEC during the last ten years with the assumption that temperatures had been at their 20-year normal amounts in each year.

The weather normalized values are calculated using the econometric models that identify weather as a driver of electricity sales. These are the Residential use per consumer and the GCI use per consumer models. Additionally, the load factor model (used to project peak demands) also includes temperature variables. The weather impacts of the deviation from the actual weather to the weather normalized weather are estimated using these models. The weather impacts are then added (or subtracted) to the actual load in that year to determine the weather normalized energy or peak demand.

The following table provides the last ten years of historical data for JPEC's Rural system. The normalized peak values displayed are a maximum of each monthly normalized value for the given season and therefore frequently occur in a different month than the actual value. Monthly normalized values are provided in Excel that detail the weather normalized values for each monthly peak day.

Rural System Weather Normalized

JPEC Rural System Weather Normalized						
Year	Energy (MWh)		Winter CP Demand		Summer CP Demand	
	Actual	Normalized	Actual	Normalized	Actual	Normalized
2013	670,360	674,811	126,111	125,843	139,485	146,941
2014	685,357	669,074	157,275	145,171	141,668	140,150
2015	665,040	666,147	147,777	137,137	152,076	149,214
2016	661,559	657,235	129,764	123,640	144,033	141,697
2017	628,392	645,892	130,891	134,551	148,902	141,489
2018	664,405	637,936	145,041	122,257	145,856	140,027
2019	630,787	626,510	123,172	124,058	138,722	138,433
2020	605,330	616,547	117,748	118,133	134,560	130,716
2021	622,286	629,488	143,176	110,989	141,100	143,791
2022	637,651	628,784	151,269	126,026	145,809	136,881

The following table provides the last ten years of historical data for JPEC's total system.

Total System Weather Normalized

JPEC Total System Weather Normalized						
Year	Energy (MWh)		Winter CP Demand		Summer CP Demand	
	Actual	Normalized	Actual	Normalized	Actual	Normalized
2013	676,355	680,806	126,138	125,870	141,267	148,723
2014	690,322	674,039	159,073	146,969	141,684	142,040
2015	670,884	671,991	149,424	138,784	153,690	150,829
2016	668,448	664,124	129,796	125,352	145,767	143,431
2017	633,548	651,048	132,543	136,204	148,918	141,506
2018	665,271	638,801	145,079	122,294	145,878	140,049
2019	631,177	626,901	123,205	124,090	138,738	138,450
2020	605,367	616,583	117,764	118,149	134,560	130,716
2021	622,286	629,488	143,176	110,989	141,100	143,791
2022	802,936	794,069	167,655	142,412	171,103	162,175

7 FORECAST METHODOLOGY

The load forecast process began with discussions with Clearspring Energy to solicit feedback from Big Rivers and representatives of each of the Member systems. The forecasting team issued an information request to each Member system requesting monthly energy data by rate class, historical or anticipated changes in load on the system, large consumer energy and peak demand data, and retail price forecasts. Big Rivers provided historical demand data used as the basis to forecast load factors and peak demands.

In addition to this data, Clearspring Energy collected a variety of additional data to develop the load forecast. This included county-level historical socioeconomic data from Woods & Poole Economics, Inc., historical alternative fuel price data and energy efficiency indexes from the Energy Information Administration (EIA)[1], electric vehicle and distributed generation projections from the EIA, electric vehicle load shapes from the Department of Energy Alternative Fuels Data Center[2], distributed generation load shapes from the National Renewable Energy Laboratory (NREL)[3], monthly and daily weather data from the Midwest Regional Climate Center (MRCC)[4] and High Plains Regional Climate Center (HPRCC)[5], and appliance and end-use saturations for each Member system based off historical end-use surveys conducted by Big Rivers. The most recent survey was conducted in 2022.

7.1 DATABASE SETUP AND ANALYSES

Upon receipt of the associated Member systems' data, Big Rivers' data, and data obtained from external sources, Clearspring Energy reviewed the data for accuracy and adequacy for use in the study. An electronic database with consumer and energy sales by rate class and demand data was developed using Microsoft Excel.

[1] https://www.eia.gov/outlooks/aeo/
[2] https://afdc.energy.gov/vehicles/electric.html
[3] https://pvwatts.nrel.gov/
[4] https://mrcc.illinois.edu/
[5] https://hprcc.unl.edu/

County-level economic and demographic data were gathered and added to the energy database. Any financial forecasts gathered that were not provided in real terms were converted to real dollars using an inflation adjustment from the Congressional Budget Office (CBO). Weighted averages were calculated using customized Member system county weights based on the service territory of each Member system. The appropriate weights are calculated using the number of Residential consumers served for each Member system by county.

Weather variables were also calculated and added to the database. Appropriate customized weather station data was used based on the service territory location of each Member system. Historical twenty-year averages of the selected weather variables were calculated and used as the basis for the normal weather expectation in future years and in the weather normalization results.

Big Rivers conducts residential end-use appliance surveys for residential consumers every few years and plans to continue this process in the future. The surveys provide data on major appliance saturations, fuel types, housing characteristics, as well as adoption rates for new equipment and technologies. This information provides valuable insight into the makeup of the Residential class and the Big Rivers load forecasting effort will continue to make enhancements to the forecasting process as the market penetration of new technologies and equipment continues. The various data elements and sources are displayed in the table below.

Data Sources

Data Category	Data Source
Energy, Demand, Customers, and Electricity Price	Big Rivers and its three Member systems
Economic & Demographic	Woods & Poole Economics, Inc.
Weather	Midwest Regional Climate Center High Plains Regional Climate Center
Alternative Fuel Prices and Appliance Energy Efficiency	Energy Information Administration
Electric Vehicle Data	Energy Information Administration and Alternative Fuels Data Center
Distributed Generation Data	Energy Information Administration and National Renewable Energy Laboratory
End-Use Appliance Saturations	Big Rivers Survey Reports

7.2 Model Development

Clearspring estimated econometric models to forecast Residential use per consumer, GCI consumers, GCI use per consumer, and the CP load factor. A separate model was developed for each member system and for each component. A growth index using household forecasts was used to escalate Residential consumers.

Forecasts for the LCI and Direct Serve commercial consumers were prepared judgmentally based on input from the Member systems. Due to their relatively small size, trend analysis was used to project the Street and Highway and Irrigation classes.

Econometric parameters were estimated using the ordinary least squares (OLS) approach to regression analysis employed by the EViews™ version 10 econometric software package. Heteroskedasticity adjusted standard errors were calculated for statistical significance testing of the included variables. The models were selected based on theoretical and statistical validity as well as the reasonableness of the forecast results generated.

The statistical validity of each variable included in the model needed to pass two key criterion to be included in the model. A simple but important standard is that the coefficient of each explanatory variable must have a logical sign. For example, energy sales will generally increase during periods of colder or hotter weather (i.e., these variables should have positive coefficients). Conversely, energy sales generally decrease with increasing electricity prices (i.e., the coefficient of this variable should be negative).

The second criterion is the fact that each explanatory variable has a statistically significant influence on the dependent variable. The statistical significance of an explanatory variable is measured by the t-statistic. The specific value of a particular t-statistic required for statistical significance depends on both the degrees of freedom (the number of data points less the number of variables) of the equations and desired level of confidence in the estimated coefficients. In general, however, the t-statistic should have a magnitude of at least 1.645 for a 90 percent level of confidence.

Another validity criterion that we took into consideration are examinations of the equation residuals (the difference between the actual historical and estimated historical values). In a good equation, the residuals are randomly distributed and of approximately constant magnitude, in absolute terms.

This indicates that there is no obvious pattern in the data that has not been explained by the equation.

The models developed must also pass a test of reasonableness. Models must make intuitive sense to the members of the forecasting team and the forecasts that result must be plausible given reasonable assumptions of growth factors. All models created in the load forecast pass these criteria.

7.3 Forecast Development

Using the econometric equations developed as part of the modeling process, monthly forecasts were created for each of the Member systems. The modeled classes are calculated using the estimated equations along with forecasted values for those variables that enter into the estimated equation.

The amount of energy required by each system (ultimately provided by Big Rivers) is greater than the sum of the retail energy sales. System own-use and energy losses are forecast for each Member system. Energy losses are forecasted as a percentage of total system energy requirements based on historical loss data.

Three monthly demand values are determined for each of the Member distribution cooperatives. The individual Direct Serve consumer non-coincident peaks, the distribution cooperative's Rural non-coincident peak demand, and its contribution to the Big Rivers monthly coincident peak (CP). Clearspring developed a load factor econometric model to forecast the Rural coincident peak load factor which we then use to calculate the peak demand forecasts for each of the three Member systems.

Preliminary forecasts were distributed to the respective Member systems and Big Rivers for their review and input. The Member systems offered suggestions for revisions to the forecasts and these revisions were incorporated.

7.4 Changes in Methodology From 2020 Load Forecast

The 2020 and 2023 load forecasts were both conducted by Clearspring Energy Advisors, LLC. The following list documents changes to the methodological approach used in the two studies.

1. The methodological approach to forecasting electric vehicles and distributed generation outlined in section 2 of this report is new in the 2023 study.
2. Twenty-year historical weather averages are used as the projected weather value in the baseline forecasts for the 2023 study. The 2020 study used fifteen-year averages.
3. There is one Direct Serve consumer that is currently served as partial requirement by Big Rivers that is expected to transition to full requirement in the forecast period. In the 2023 study, the modeling database was revised to include this customer's full load.

8 APPENDIX

The following table provides the details on the consumers, sales, and use per consumer for each class for JPEC's system. The prior five years and the forecasted year values are provided in the table. Both historical and forecasted growth rates for each class are also provided.

Jackson Purchase Energy Corporation										
RESIDENTIAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	25,578	25,511	25,572	25,616	25,574	25,570	25,677	25,764	25,837	25,896
SALES-MWH	391,939	367,296	349,995	358,997	367,448	373,138	374,345	372,409	372,648	373,097
USE PER CONSUMER-kWH	15,323	14,398	13,687	14,014	14,368	14,593	14,579	14,454	14,423	14,408
GENERAL C&I	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	4,437	4,502	4,603	4,731	4,849	4,962	4,947	4,997	5,057	5,116
SALES-MWH	208,524	194,897	183,578	191,622	193,863	201,470	202,615	202,708	205,017	207,231
USE PER CONSUMER-kWH	46,998	43,287	39,879	40,501	39,978	40,602	40,958	40,569	40,539	40,503
LARGE C&I	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	6	7	7	7	7	8	8	8	8	8
SALES-MWH	36,537	40,887	40,833	41,559	41,946	45,625	49,305	49,305	49,305	49,305
USE PER CONSUMER-kWH	6,089,574	5,840,932	5,833,262	5,936,966	5,992,325	6,083,397	6,163,085	6,163,085	6,163,085	6,163,085
IRRIGATION	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	5	5	5	5	5	5	5	5	5	5
SALES-MWH	70	114	50	84	130	93	93	93	93	93
USE PER CONSUMER-kWH	15,618	22,742	10,043	16,704	26,082	18,625	18,625	18,625	18,625	18,625
STREET & HIGHWAY	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	6	7	11	18	22	23	23	23	23	23
SALES-MWH	621	604	647	644	682	710	710	710	710	710
USE PER CONSUMER-kWH	111,140	88,356	58,821	36,126	30,768	30,872	30,872	30,872	30,872	30,872
RURAL TOTAL	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	30,031	30,032	30,198	30,377	30,458	30,568	30,659	30,797	30,930	31,048
SALES-MWH	637,691	603,796	575,103	592,906	604,071	621,037	627,068	625,225	627,773	630,436
USE PER CONSUMER-kWH	21,234	20,105	19,044	19,518	19,833	20,317	20,453	20,301	20,296	20,305
OWNUSE-MWH	185	171	159	904	1,248	1,253	1,257	1,262	1,268	1,272
PURCHASES-MWH	664,405	630,787	605,330	622,286	637,651	654,155	660,499	658,568	661,252	664,056
LOSSES-MWH	26,529	26,820	30,068	28,477	32,332	31,866	32,175	32,081	32,211	32,348
LOSSES (%)	4.0%	4.3%	5.0%	4.6%	5.1%	4.9%	4.9%	4.9%	4.9%	4.9%
DIRECT SERVE	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	1	1	1	0	1	1	1	1	1	1
SALES-MWH	866	390	36	0	165,285	226,800	239,301	239,301	239,301	239,301
USE PER CONSUMER-kWH	865,807	390,236	72,392	0	180,311,113	226,800,000	239,300,816	239,300,816	239,300,816	239,300,816
SYSTEM TOTAL WITH DIRECT SERVE	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
CONSUMERS	30,032	30,033	30,199	30,377	30,459	30,569	30,660	30,798	30,931	31,049
SALES-MWH	638,557	604,186	575,139	592,906	769,356	847,837	866,369	864,526	867,074	869,737
USE PER CONSUMER-kWH	21,263	20,118	19,045	19,518	25,259	27,735	28,257	28,071	28,032	28,012
OWNUSE-MWH	185	171	159	904	1,248	1,253	1,257	1,262	1,268	1,272
PURCHASES-MWH	665,271	631,177	605,367	622,286	802,936	880,955	899,800	897,869	900,553	903,357
LOSSES-MWH	26,529	26,820	30,068	28,477	32,332	31,866	32,175	32,081	32,211	32,348
LOSSES (%)	4.0%	4.2%	5.0%	4.6%	4.0%	3.6%	3.6%	3.6%	3.6%	3.6%
ANNUAL PEAK	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
RURAL CP - kW	145,041	123,172	134,560	143,176	151,269	137,639	137,999	137,596	138,085	138,613
DIRECT SERVE CP - kW	38	32	0	0	16,386	25,713	27,130	27,130	27,130	27,130
TOTAL CP - kW	145,079	123,205	134,560	143,176	167,655	163,352	165,129	164,726	165,215	165,743
RURAL NCP - kW	146,742	139,022	137,225	143,176	152,695	142,939	143,380	142,981	143,504	144,066
DIRECT SERVE SUM OF INDIVIDUAL NCP - kW	1,793	1,733	32	0	30,984	27,794	29,325	29,325	29,325	29,325

Jackson Purchase Energy Corporation										
RESIDENTIAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	25,942	25,976	25,997	26,009	26,010	26,003	25,990	25,971	25,948	25,921
SALES-MWH	373,698	374,593	375,556	375,723	377,857	377,367	377,291	377,263	378,131	378,053
USE PER CONSUMER-kWH	14,405	14,421	14,446	14,446	14,527	14,513	14,517	14,526	14,573	14,585
GENERAL C&I	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	5,174	5,231	5,287	5,342	5,397	5,451	5,505	5,559	5,613	5,668
SALES-MWH	209,814	212,638	215,959	218,412	223,188	225,024	227,465	230,085	233,671	236,093
USE PER CONSUMER-kWH	40,550	40,650	40,848	40,884	41,355	41,279	41,317	41,387	41,627	41,657
LARGE C&I	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	8	7	7	7	7	7	7	7	7	7
SALES-MWH	46,852	41,946	41,946	41,946	41,946	41,946	41,946	41,946	41,946	41,946
USE PER CONSUMER-kWH	6,111,115	5,992,325	5,992,325	5,992,325	5,992,325	5,992,325	5,992,325	5,992,325	5,992,325	5,992,325
IRRIGATION	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	5	5	5	5	5	5	5	5	5	5
SALES-MWH	93	93	93	93	93	93	93	93	93	93
USE PER CONSUMER-kWH	18,625	18,625	18,625	18,625	18,625	18,625	18,625	18,625	18,625	18,625
STREET & HIGHWAY	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	23	23	23	23	23	23	23	23	23	23
SALES-MWH	710	710	710	710	710	710	710	710	710	710
USE PER CONSUMER-kWH	30,872	30,872	30,872	30,872	30,872	30,872	30,872	30,872	30,872	30,872
RURAL TOTAL	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	31,152	31,242	31,319	31,386	31,442	31,489	31,530	31,566	31,597	31,623
SALES-MWH	631,166	629,980	634,265	636,884	643,794	645,141	647,506	650,097	654,552	656,895
USE PER CONSUMER-kWH	20,261	20,165	20,252	20,292	20,476	20,488	20,536	20,595	20,716	20,773
OWNUSE-MWH	1,277	1,280	1,284	1,286	1,289	1,291	1,292	1,294	1,295	1,296
PURCHASES-MWH	664,829	663,586	668,093	670,850	678,116	679,533	682,022	684,747	689,431	691,895
LOSSES-MWH	32,386	32,325	32,545	32,679	33,033	33,102	33,223	33,356	33,584	33,704
LOSSES (%)	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%	4.9%
DIRECT SERVE	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	1	1	1	1	1	1	1	1	1	1
SALES-MWH	239,301	239,301	239,301	239,301	239,301	239,301	239,301	239,301	239,301	239,301
USE PER CONSUMER-kWH	239,300,816	239,300,816	239,300,816	239,300,816	239,300,816	239,300,816	239,300,816	239,300,816	239,300,816	239,300,816
SYSTEM TOTAL WITH DIRECT SERVE	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
CONSUMERS	31,153	31,243	31,320	31,387	31,443	31,490	31,531	31,567	31,598	31,624
SALES-MWH	870,467	869,281	873,565	876,185	883,095	884,442	886,807	889,398	893,853	896,196
USE PER CONSUMER-kWH	27,942	27,823	27,892	27,915	28,085	28,086	28,125	28,175	28,289	28,339
OWNUSE-MWH	1,277	1,280	1,284	1,286	1,289	1,291	1,292	1,294	1,295	1,296
PURCHASES-MWH	904,130	902,887	907,394	910,150	917,417	918,834	921,323	924,048	928,732	931,196
LOSSES-MWH	32,386	32,325	32,545	32,679	33,033	33,102	33,223	33,356	33,584	33,704
LOSSES (%)	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%	3.6%
ANNUAL PEAK	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
RURAL CP - kW	139,267	138,678	139,585	140,134	141,634	141,903	142,399	142,942	143,896	144,377
DIRECT SERVE CP - kW	27,130	27,130	27,130	27,130	27,130	27,130	27,130	27,130	27,130	27,130
TOTAL CP - kW	166,397	165,808	166,715	167,264	168,764	169,033	169,529	170,072	171,026	171,507
RURAL NCP - kW	144,756	144,119	145,073	145,655	147,222	147,516	148,045	148,622	149,625	150,139
DIRECT SERVE SUM OF INDIVIDUAL NCP - kW	29,325	29,325	29,325	29,325	29,325	29,325	29,325	29,325	29,325	29,325

Jackson Purchase Energy Corporation						Last 10 Yrs	Last 5 Yrs	Next 5 Yrs	Next 10 Yrs	Next 20 Yrs
RESIDENTIAL	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	25,889	25,854	25,817	25,782	25,752	-0.1%	0.0%	0.3%	0.2%	0.0%
SALES-MWH	377,825	377,528	377,144	376,807	376,628	-0.7%	0.7%	0.3%	0.3%	0.1%
USE PER CONSUMER-kWH	14,594	14,602	14,608	14,615	14,625	-0.6%	0.7%	0.1%	0.1%	0.1%
GENERAL C&I	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	5,722	5,776	5,831	5,886	5,943	4.0%	2.2%	1.1%	1.1%	1.0%
SALES-MWH	238,410	240,721	242,858	245,018	247,514	0.1%	-1.5%	1.3%	1.4%	1.2%
USE PER CONSUMER-kWH	41,667	41,674	41,649	41,624	41,651	-3.7%	-3.6%	0.3%	0.3%	0.2%
LARGE C&I	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	7	7	7	7	7	-1.8%	5.3%	2.7%	0.0%	0.0%
SALES-MWH	41,946	41,946	41,946	41,946	41,946	0.1%	3.7%	3.3%	0.0%	0.0%
USE PER CONSUMER-kWH	5,992,325	5,992,325	5,992,325	5,992,325	5,992,325	2.0%	-1.5%	0.6%	0.0%	0.0%
IRRIGATION	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	5	5	5	5	5	0.0%	4.6%	0.0%	0.0%	0.0%
SALES-MWH	93	93	93	93	93	-11.5%	5.1%	-6.5%	-3.3%	-1.7%
USE PER CONSUMER-kWH	18,625	18,625	18,625	18,625	18,625	-11.5%	0.5%	-6.5%	-3.3%	-1.7%
STREET & HIGHWAY	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	23	23	23	23	23	22.1%	37.6%	0.7%	0.4%	0.2%
SALES-MWH	710	710	710	710	710	1.0%	1.7%	0.8%	0.4%	0.2%
USE PER CONSUMER-kWH	30,872	30,872	30,872	30,872	30,872	-17.3%	-26.1%	0.1%	0.0%	0.0%
RURAL TOTAL	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	31,646	31,665	31,683	31,704	31,730	0.4%	0.3%	0.4%	0.3%	0.2%
SALES-MWH	658,985	660,998	662,751	664,574	666,891	-0.4%	0.1%	0.9%	0.6%	0.5%
USE PER CONSUMER-kWH	20,824	20,875	20,918	20,962	21,018	-0.8%	-0.2%	0.5%	0.3%	0.3%
OWNUSE-MWH	1,297	1,298	1,298	1,299	1,300	21.1%	48.4%	0.4%	0.3%	0.2%
PURCHASES-MWH	694,093	696,210	698,054	699,971	702,408	-0.4%	0.3%	0.8%	0.6%	0.5%
LOSSES-MWH	33,811	33,914	34,004	34,098	34,216	-0.4%	2.8%	0.0%	0.2%	0.3%
LOSSES (%)	4.9%	4.9%	4.9%	4.9%	4.9%	0.0%	2.5%	-0.8%	-0.4%	-0.2%
DIRECT SERVE	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	1	1	1	1	1	-0.9%	-1.7%	1.8%	0.9%	0.4%
SALES-MWH	239,301	239,301	239,301	239,301	239,301	41.2%	100.1%	7.7%	3.8%	1.9%
USE PER CONSUMER-kWH	239,300,816	239,300,816	239,300,816	239,300,816	239,300,816	42.4%	103.6%	5.8%	2.9%	1.4%
SYSTEM TOTAL WITH DIRECT SERVE	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
CONSUMERS	31,647	31,666	31,684	31,705	31,731	0.4%	0.3%	0.4%	0.3%	0.2%
SALES-MWH	898,286	900,299	902,052	903,875	906,192	1.9%	4.9%	2.5%	1.4%	0.8%
USE PER CONSUMER-kWH	28,385	28,431	28,470	28,509	28,559	1.5%	4.6%	2.1%	1.1%	0.6%
OWNUSE-MWH	1,297	1,298	1,298	1,299	1,300	21.1%	48.4%	0.4%	0.3%	0.2%
PURCHASES-MWH	933,394	935,511	937,354	939,272	941,709	1.8%	4.9%	2.4%	1.3%	0.8%
LOSSES-MWH	33,811	33,914	34,004	34,098	34,216	-0.4%	2.8%	0.0%	0.2%	0.3%
LOSSES (%)	3.6%	3.6%	3.6%	3.6%	3.6%	-2.2%	-2.0%	-2.4%	-1.1%	-0.5%
ANNUAL PEAK	2038	2039	2040	2041	2042	2012 - 2022	2017 - 2022	2022 - 2027	2022 - 2032	2022 - 2042
RURAL CP - kW	144,799	145,202	145,543	145,901	146,367	-0.5%	0.3%	-1.7%	-0.7%	-0.2%
DIRECT SERVE CP - kW	27,130	27,130	27,130	27,130	27,130	94.1%	299.0%	10.6%	5.2%	2.6%
TOTAL CP - kW	171,929	172,332	172,673	173,031	173,497	0.6%	2.4%	-0.2%	0.1%	0.2%
RURAL NCP - kW	150,592	151,026	151,398	151,789	152,292	-0.5%	0.5%	-1.2%	-0.4%	0.0%
DIRECT SERVE SUM OF INDIVIDUAL NCP - kW	29,325	29,325	29,325	29,325	29,325	31.2%	58.0%	-1.1%	-0.5%	-0.3%

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 3: Refer to the Application generally. Provide the following information for Jackson Purchase Energy executive staff employees.

a. Provide the position title and salary for each executive staff employee for the years 2014 – 2024

b. Provide the average raise that the executive staff employees received for the years 2014 – 2024. Ensure to explain whether the annual raise is directly connected to a performance review.

c. Provide the average bonus that each executive staff employee received for the years 2014 - 2024.

d. Provide all awards given to the executive staff employees for the years 2014 – 2024.

e. Provide all vehicle allowances given to the executive staff employees for the years 2014 – 2024.

f. Provide all incentive compensation given to the executive staff employees for the years 2014 – 2024.

g. Provide the average raise, if any, which will be given to executive staff employees for 2024.

h. Provide the average raise, if any, which will be given to executive staff employees for 2025.

i. Provide a detailed explanation of the insurance benefits provided to the Company's executive staff employees, including but not limited to health, dental, vision, life insurance, etc. Ensure to include all premiums paid by the Company's executive staff employees, premiums paid by the Company or parent company on the executive staff employees' behalf, as well as all copays, deductibles, and maximum out of pocket amounts.

j. Provide a detailed explanation of the retirement benefits provided to the Company's executive staff employees, including but not limited to, whether there is a defined benefit plan, 401(k) matching, etc.

k. Explain whether any of the executive staff employees are members of a union.

Response 3a, 3c-3f: Please see the attached Excel spreadsheet. A separate tab is available for each calendar year.

Response 3b: Please see the attached Excel spreadsheet. A separate tab is available for each calendar year. Non-bargaining employees complete performance reviews and discussions with their supervisors at least annually, and raises for those employees are based on their progress and performance throughout the year and/or any additional or new job duties assumed by the employee. Please see Jackson Purchase's Procedure No. 332, Wages and Salary, provided in response to the Commission Staff's First Request for Information, Item 29.

Response 3g: There has been no decision on executive staff raises for 2024.

Response 3h: There has been no decision on executive staff raises for 2025.

Response 3i: See Jackson Purchase's Response to Staff's First Request for Information, Item 23 and Item 25.

Response 3j: See Jackson Purchase's Response to Staff's First Request for Information, Item 26 and Item 27 and Item 28.

Response 3k: Jackson Purchase's executive staff are not members of a union.

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 4: Refer to the Application generally. Provide the following information for Jackson Purchase Energy employees.

a. Provide the position title and salary for each salaried employee for the years 2014 – 2024.

b. Provide the average raise that the salaried employees received for the years 2014 – 2024. Ensure to explain whether the annual raise is directly connected to a performance review.

c. Provide the average bonus that each salaried employee received for the years 2014 - 2024.

d. Provide all awards given to the salaried employees for the years 2014 – 2024.

e. Provide all vehicle allowances given to the salaried employees for the years 2014 – 2024.

f. Provide all incentive compensation given to the salaried employees for the years 2014 – 2024.

g. Provide the average raise, if any, which will be given to salaried employees for 2024.

h. Provide the average raise, if any, which will be given to salaried employees for 2025.

i. Provide a detailed explanation of the insurance benefits provided to the Company's salaried employees, including but not limited to health, dental, vision, life insurance, etc. Ensure to include all premiums paid by the Company's salaried employees, premiums paid by the Company or parent company on the salaried employees' behalf, as well as all copays, deductibles, and maximum out of pocket amounts.

j. Provide a detailed explanation of the retirement benefits provided to the Company's salaried employees, including but not limited to, whether there is a defined benefit plan, 401(k) matching, etc.

k. Explain whether any of the salaried employees are members of a union.

Response 4a, 4c-4h: Please see the Excel spreadsheet provided in response to Item 3.

Response 4b: Please see the attached Excel spreadsheet that corresponds with Request 3. A separate tab is available for each calendar year. Non-bargaining employees complete performance reviews and discussions with their supervisors at least annually, and raises for those employees are based on their progress and performance throughout the year and/or any additional or new job duties assumed by the employee. Please see Jackson Purchase's Procedure No. 332, Wages and Salary, provided in response to the Commission Staff's first request, request number 29.

Response 4g: There has been no decision on salaried staff raises for 2024.

Response 4h: There has been no decision on salaried staff raises for 2025.

Response 4i: See Jackson Purchase's Response to Staff's First Request for Information, Item 23 and Item 25.

Response 4j: See Jackson Purchase's Response to Staff's First Request for Information, Item 23 and Item 25.

Response 4k: No salaried employee at Jackson Purchase is a member of a union.

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 5: Refer to the Application generally. Provide the following information for Jackson Purchase Energy employees.

a. Provide the position title and wages for each non-salaried employee for the years 2014 – 2024.

b. Provide the average raise provided to the non-salaried employees for the years 2014 – 2024. Ensure to explain whether the annual raise is directly connected to a performance review.

c. Provide the average bonus provided to the non-salaried employees for the years 2014 – 2024.

d. Provide all awards given to the non-salaried employees for the years 2014 – 2024.

e. Provide all vehicle allowances given to the non-salaried employees for the years 2014 – 2024.

f. Provide all incentive compensation given to the non-salaried employees for the years 2014 – 2024.

g. Provide the average raise, if any, which will be given to non-salaried employees for 2024.

h. Provide the average raise, if any, which will be given to non-salaried employees for 2025.

i. Provide a detailed explanation of the insurance benefits provided to the Company's non-salaried employees, including but not limited to health, dental, vision, life insurance, etc. Ensure to include all premiums paid by the Company's non-salaried employees,

premiums paid by the Company or parent company on the non-salaried employees' behalf, as well as all copays, deductibles, and maximum out of pocket amounts.

j. Provide a detailed explanation of the retirement benefits provided to the Company's non-salaried employees, including but not limited to, whether there is a defined benefit plan, 401(k) matching, etc.

k. Explain whether any of the non-salaried employees are members of a union.

Response 5a, 5c-5f: Please see the Excel spreadsheet provided in response to Item 3.

Response 5b: Please see the attached Excel spreadsheet. A separate tab is available for each calendar year. Non-bargaining employees complete performance reviews and discussions with their supervisors at least annually, and raises for those employees are based on their progress and performance throughout the year and/or any additional or new job duties assumed by the employee. Please see Jackson Purchase's Procedure No. 332, Wages and Salary, provided in response to the Commission Staff's first request, request number 29. Bargaining employees' raises are negotiated within the Union contract.

Response 5g: There has been no decision on non-salaried staff raises for 2024.

Response 5h: There has been no decision on non-salaried raises for 2025.

Response 5i: See Jackson Purchase's Response to Staff's First Request for Information, Item 23 and Item 25.

Response 5j: See Jackson Purchase's Response to Staff's First Request for Information, Item 23 and Item 25.

Response 5k: Yes, Jackson Purchase currently has 30 employees who are members of a union, all of which are non-salaried.

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 6: Refer to the Application generally.

a. Provide a detailed explanation of all salary and benefits provided to the members of the Board of Directors during the years 2014 – 2024. Ensure to provide the salary amounts, and specific details regarding all benefit packages, including but not limited to health, dental, vision, accidental death and disability, life insurance, bonuses, awards, vehicle allowances, and the like.
b. Provide the total amount of the Board of Directors' fees for the test year.
c. Provide a breakdown of the total amount of the Board of Directors' fees for the test year.
d. Discuss if there will be any changes to the Board of Directors' salaries and/or benefit packages in 2024 or 2025.
e. When setting the Board of Directors' fees and benefits did Jackson Purchase Energy review other Kentucky rural electric cooperative Board of Directors' fees and benefits? If so, explain in detail the findings. If not, explain in detail why not.

Response 6a: Jackson Purchase's Board of Directors do not receive a salary for their services; instead, they receive a fixed amount for each day or portion thereof spent on Corporation business. Compensation is paid in accordance with Jackson Purchase Energy Bylaws Article IV; Section 7 – Compensation, and JPEC Board Policy 106 – Payment of Director fees, both of which have been attached below. The fixed amount from 2014 – October 2019 was $200 for Directors and $300

for Chairman. From October 2019 to present Directors are paid $300 for attendance with the Chairman receiving $400. Jackson Purchase's bylaws state a yearly maximum sum that each Director may receive; these amounts cannot be amended without a vote of the membership. The current maximum yearly sum for director fees is as follows: Board Chair - $18,000/calendar year; Director seeking certification - $16,000/calendar year; all other Directors - $15,000/calendar year.

Mileage is reimbursed at the federal mileage rate. Travel, lodging and other ordinary and necessary expenses incurred in the performance of their duties on behalf of JPEC are reimbursed. Directors are provided with a Directors AD&D Only Insurance Plan. They are not provided health, dental, vision, life insurance, bonuses or vehicle allowances. Directors receive a $25/month cell phone stipend.

Response 6b: Please see the Excel file provided separately. The total Director fees during the test year totaled $79,375.

Response 6c: Please see the Excel file provided separately.

Response 6d: Jackson Purchase does not anticipate any changes in 2024 or 2025.

Response 6e: Jackson Purchase did not conduct a review of other Kentucky cooperatives' fees and benefits for Directors when setting its fees. Jackson Purchase provides only minimal financial benefits to its Directors, and as stated in Response 6a above, a maximum yearly sum for Directors' services to the Cooperative are set forth by the bylaws, which are approved by the members.

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 7: Refer to the Application generally. Provide a copy of all formal studies conducted that compare Jackson Purchase Energy's wage and benefit information to the local wage and benefit information for the geographic area in which Jackson Purchase Energy operates. If no such study exists, explain why not.

Response 7: Jackson Purchase utilizes an outside consultant to perform a salary study. The salary study was provided under seal pursuant to a Motion for Confidential Treatment in response to Commission Staff's First Request for Information, Item 19.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 8: Refer to the Application generally. Explain the current process of awarding wage/salary increases to salaried versus non-salaried and union versus non-union employees.

Response 8: Please refer to the responses Commission Staff's First Request for Information, Items 21 and 29.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 9: Refer to the Application generally. Explain in detail whether Jackson Purchase Energy has obtained and/or whether the Company is seeking any funds/grants from federal, state, or local sources which have been or will be made available. If so, identify the source and amount of those funds/grants. If not, and funds/grants are available for which the Company is eligible, explain why the Company is foregoing those opportunities.

Response 9: Jackson Purchase has submitted two projects for possible funding under Department of Energy's Grid Resilience and Innovation Partnership (GRIP) Programs. Both projects are part of consortiums, one through National Rural Electric Cooperative Association ("NRECA"), and another through Aerinet. Award announcements have not been made at this time. Jackson Purchase's project within the NRECA consortium entails the installation of three phase electronic reclosers, controls, and communications to our existing SCADA system for a total project cost of approximately $708,000 with a 25% cost share. Jackson Purchase's project within the Aerinet consortium entails the implementation of a DERMS system along with downline hardware for load control and demand response for a total project cost of approximately $25.6M with a 50% cost share.

Jackson Purchase Energy Corporation
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Request 10: Refer to the Application generally. Provide a succinct list that identifies all proposed pro forma adjustments, the amount of each pro forma adjustment, along with a brief description of each adjustment.

Response 10: See Application, Exhibit 10, Wolfram Direct Testimony, page 8, and Exhibit JW-2.

Jackson Purchase Energy Corporation
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Request 11: Refer to the Application generally. Provide a list that identifies all miscellaneous costs for the test year, including but not limited to dinners (including all holiday dinners), gifts, donations, membership dues, annual meeting costs, etc. For each cost indicate whether it was removed from or included in the requested revenue requirement.

Response 11: Please see response to Item 40.

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Request 12: Refer to the Application generally. Explain in detail whether there are any direct charges, allocated costs, surcharges, pass-through charges, etc., from Big Rivers electric Corporation ("Big Rivers"), or any other entity, to Jackson Purchase Energy. If so, provide a detailed list of the same with explanations for each allocated charge.

Response 12: All of the costs from Big Rivers are included in the purchased power invoices from Big Rivers. These are included in Account 555 and are detailed by month in the Application, Exhibit 10, Direct Testimony of John Wolfram, Exhibit JW-7.

Jackson Purchase Energy Corporation
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Request 13: Refer to the Application generally. Explain in detail whether Jackson Purchase Energy provides any assistance program(s) for customers experiencing difficulty paying their electric bills.

Response 13: Jackson Purchase offers a payment extension option for members who are unable to pay their bill by the disconnection date. The payment extensions allow the member two additional weeks to pay the past-due amount before being disconnected. Local payment assistance agencies are also recommended by staff at Jackson Purchase to any member who expresses financial difficulties or the inability to pay their electric bill.

Jackson Purchase Energy Corporation
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Request 14: Refer to the Application generally.

a. Provide a detailed explanation of how Jackson Purchase Energy operates its capital credit program, and ensure to discuss how the Company accounts for capital credits that cannot be provided back to the member due to the member passing away, moving, etc.

b. Provide the monetary amount of capital credits that Jackson Purchase Energy currently has on the books, separated by year.

Response 14a: Jackson Purchase's patronage allocation is described in the Corporate bylaws in Article VII, Section 2 – Patronage Capital in Connection with Furnishing Electric Energy (attached). Once a member is deceased, the patronage may be awarded to any living heir of the deceased member's estate who signs an affidavit authorizing payment. If a member moves, that member can still collect capital credits associated with their previous membership.

Response 14b: Please see the attached Excel spreadsheet.

ATTACHMENT AG 1-14a

Capital Credit Bylaws

reports covering the business of the Corporation for the previous fiscal year. Such reports shall set forth the condition of the Corporation at the close of such fiscal year.

Section 11 – Delegation of Secretary's and Treasurer's Responsibilities. Notwithstanding the duties, responsibilities and authorities of the Secretary and of the Treasurer hereinbefore provided in Sections 6 and 7, the Board by resolution may, except as otherwise limited by law, delegate, wholly or in part, the responsibility and authority for, and the regular or routine administration of, one or more of each such officer's duties to one (1) or more other officers or employees of the Corporation who are not directors. To the extent that the Board does so delegate with respect to any such officer, that officer as such shall be released from such duties, responsibilities and authorities.

ARTICLE VII
NONPROFIT OPERATION

Section 1 – Interest or Dividends on Capital Prohibited. The Corporation shall, at all times, be operated on a Corporation nonprofit basis for the mutual benefit of its patrons. No interest or dividends shall be paid or payable by the Corporation on any capital furnished by its patrons.

Section 2 – Patronage Capital in Connection with Furnishing Electric Energy. In the furnishing of energy, the Corporation's operations shall be so conducted that all patrons will, through their patronage, furnish capital for the Corporation. In order to induce patronage and to assure that the Corporation will operate on a nonprofit basis, the Corporation is obligated to account on a patronage basis to all its patrons for all amounts received and receivable from the furnishing of electric energy in excess of operating costs and expenses properly chargeable against the furnishing of electric energy. All such amounts in excess of operating costs and expenses at the moment of receipt by the Corporation are received with the understanding that they are furnished by the patrons, as capital. The Corporation is obligated to pay, by credits, to a capital account for each patron, all such amounts in excess of operating costs and expenses. The books and records of the Corporation shall be set up and kept in such a manner that, at the end of each fiscal year, the amount of capital, if any, so furnished by each patron is clearly reflected and credited in an appropriate record to the capital account of each patron. Each patron shall have the right, within a reasonable time after the close of the Corporation's fiscal year, to request a disclosure of the amount of capital so credited to the member's account. The Corporation shall respond to such a request within ten (10) working days from the date of the request or as promptly thereafter as possible.

All such amounts credited to the capital account of any patron shall have the same status as though they had been paid to the patron in cash in pursuance of a legal obligation to do so and the patron had then furnished the Corporation corresponding amounts for capital. All other amounts received by the Corporation from its operations in excess of costs and expenses shall, insofar as permitted by law, be:

(a) used to offset any losses incurred during the current or any prior fiscal year; and

(b) to the extent not needed for that purpose, allocated to its patrons on a patronage basis, and any amount so allocated shall be included as a part of the capital credited to the accounts of patrons, as herein provided.

In the event of dissolution or liquidation of the Corporation, after all outstanding indebtedness of the Corporation shall have been paid, outstanding capital credits shall be retired without priority on a pro-rata basis before any payments are made on account of property rights of members. If, at any time prior to dissolution or liquidation, the Board shall determine that the financial condition of the Corporation will not be impaired thereby, the capital then credited to patrons' accounts may be retired in full or in part. Any such retirements of capital shall be made in order of priority according to the year in which the capital was furnished and credited, the capital first received by the Corporation being first retired.

Capital credited to the account of each patron shall be assignable only on the books of the Corporation pursuant to written instructions from the assignor, and only to successors in interest or successors in occupancy, in all or a part of such patron's premises served by the Corporation unless the Board acting under policies of general application, shall determine otherwise.

Notwithstanding any other provision of these Bylaws, the Board, at its discretion, shall have the power at any time upon the death of any patron, if the legal representative of the patron's estate shall request in writing that the capital credited to any such patron be retired prior to the time such capital would otherwise be retired under the provisions of these Bylaws, to retire capital credited to any such patron immediately upon such terms and conditions as the Board, acting under policies of general application, and the legal representatives of such patron's estate shall agree upon; provided, however, that the financial condition of the Corporation will not be impaired thereby.

The Corporation, before retiring any capital credited to any patron's account, shall deduct therefrom any delinquent amount owing by such patron to the Corporation, together with interest thereon at the legal rate of judgments in effect when such amount became overdue, compounded annually.

The patrons of the Corporation, by dealing with the Corporation, acknowledge that the terms and provisions of the Articles of Incorporation and Bylaws shall constitute and be a contract between the Corporation and each patron, and both the Corporation and the patrons are bound by such contract, as fully as though each patron had individually signed a separate instrument containing such terms and provisions. The provisions of this Article of the Bylaws shall be called to the attention of each patron of the Corporation by posting in a conspicuous place in the Corporation's office.

ARTICLE VIII
DISPOSITION OF PROPERTY

I. Not inconsistently with the provisions of KRS 279.140 and subsection 2, the Corporation shall not sell, mortgage, lease or otherwise dispose of or encumber all or any substantial portion of its properties and assets unless such sale, mortgage, lease or other disposition or encumbrance is authorized by a majority of the then-total members of the Corporation, cast in person, at a duly held meeting of the members. Notwithstanding anything herein contained, the Board, without authorization of the members thereof, shall have full power and authority to:

(a) Sell or otherwise dispose of:

1. Property which, in the judgment of the Board, neither is nor will be necessary or useful in maintaining the Corporation's system and facilities; provided, however, that all sales of such property shall not in any one (1) year exceed in value ten (10) per centum of the value of all of the property of the Corporation (value shall be defined as the total utility plant value);

2. Services of all kinds, including electric energy;

3. Personal property and merchandise acquired for resale; and

4. Properties and assets sold in the ordinary course of business.

(b) Authorize the execution and delivery of a mortgage or mortgages or a deed of trust upon, or the pledging or encumbering of, any or all of the properties, assets, rights, privileges, licenses, franchises and permits of the Corporation, whether acquired or to be acquired, and wherever situated, as well as the revenues

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
Case No. 2024-00085
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Request 15: Refer to the Application, paragraph 2.

a. Confirm that in Case No. 2021-00358, the Commission granted Jackson Purchase Energy a $6,794,425 rate increase on April 8, 2022. If not confirmed, explain why not in detail.

b. Confirm that in Case No. 2021-00358, the Commission granted Jackson Purchase Energy an increase in the monthly residential customer charge from $16.40 to $20.35.

c. As required by the Commission's Final Order in Case No. 2021-00358, provide in specific detail what actions the Company has taken to address the ROW management expenses.

d. As required by the Commission's Final Order in Case No. 2021-00358, demonstrate the cost savings from the new headquarters or provide evidence, in sufficient detail, why the cost savings have not materialized.

e. Confirm that based upon the rate increase granted in Case No. 2021-00358, for the average Jackson Purchase Energy residential customer using 1176 kWh, the average monthly bill increased by $20.24 from $134.92 to $155.16, or a 15% increase. If not confirmed, explain why not in detail.

f. Confirm that based upon the rate increase granted in Case No. 2019-00053, the residential monthly customer charge increased from $12.45 to $16.40, and for the average Jackson Purchase Energy residential customer using 1,134 kWh, the average monthly bill increased by $3.95, from $126.73 to $130.68. If not confirmed, explain why not in detail.

Response 15a: Confirmed.

Response 15b: Confirmed.

Response 15c: Please see the response to Item 26(g).

Response 15d: Please refer to the response to Commission Staff's Second Request for Information, Item 20.

Response 15e: Jackson Purchase does not agree with these calculations. Please see the attached Excel spreadsheet that includes Jackson Purchase's calculations.

Response 15f: Confirmed.

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 16: Refer to the Application generally.

a. Explain in detail whether Jackson Purchase Energy has participated in, or continues to participate in, the Rural Utilities Service's ("RUS") Cushion of Credit program.

b. Confirm that the RUS Cushion of Credit program allowed cooperatives utilities to deposit cash with RUS from funds available in excess of its debt service requirements and earn interest on those deposits at 5.0%. However, when changes were made to the RUS Cushion of Credit Program through the enactment of the 2018 Farm Bill, it modified the interest rate on those deposits from 5% to the 1-year variable treasury rate on October 1st of each year. The 2018 Farm Bill also allowed for cooperatives to apply the Cushion of Credit funds to outstanding RUS and Federal Financing Bank ("FFB") loans by September 30, 2020, without prepayment penalties. If not confirmed, explain why not.

c. Explain whether Jackson Purchase Energy is aware of any further updates to the RUS Cushion of Credit program since the 2018 Farm Bill was enacted.

d. If Jackson Purchase Energy received interest income from the RUS Cushion of Credit program for the test year, explain whether this amount was included in the revenue requirement. If not, explain why not.

e. When changes were made to the Federal Farm Bill in 2018, explain whether Jackson Purchase Energy used its Cushion of Credit deposit amounts to prepay its RUS/FFB loans

without penalty from the period of December 20, 2018 – September 30, 2020. If not, explain in detail why not.

f. Provide a detailed account of Jackson Purchase Energy's Cushion of Credit deposit amounts for the years 2014 – 2024.

g. Provide a detailed account of Jackson Purchase Energy's RUS/FFB loans, with the corresponding principal and interest amounts, for the years 2014 – 2024.

Response 16a: Jackson Purchase used approximately $7.0M in its RUS cushion of credit to prepay higher interest RUS notes without prepayment penalty in 2020 and has not participated in the program since that time.

Response 16b: Confirmed.

Response 16c: Jackson Purchase is not aware of any further updates at this time.

Response 16d: Jackson Purchase did not receive any interest income from the RUS cushion of credit program during the test year.

Response 16e: Please refer to the response to 16(a).

Response 16f: Please see the Excel file provided separately.

Response 16g: Please see the Excel file provided separately.

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
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Request 17: Refer to the Application, paragraph 4. Jackson Purchase Energy asserts that it is requesting a $5,585,876 rate increase, or 5.8% increase, to achieve a Times Interest Earned Ratio ("TIER") of 2.0.

a. Provide Jackson Purchase Energy's TIER for the years 2014 – 2024.

b. Provide Jackson Purchase Energy's Operating Times Interest Earned Ratio ("OTIER") for the years 2014 – 2024.

Response 17a: Please see the Excel file provided separately.

Response 17b: Please see the Excel file provided separately.

Jackson Purchase Energy Corporation
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Request 18: Refer to the Application, paragraph 5. Jackson Purchase Energy states that it is requesting an increase in the monthly residential customer charge from $20.35 to $30.35.

a. Explain how seeking to increase the monthly residential customer charge from $20.35 to $30.35, which is an increase of approximately 49.14%, is in line with the principle of gradualism.

b. Explain whether Jackson Purchase Energy contemplated proposing a lower increase to the monthly residential customer charge so as not to create rate shock for the customers.

c. Explain whether Jackson Purchase Energy contemplated implementing the proposed higher customer charge in two phases instead of a 49.14% increase at one time.

d. Confirm that in Case No. 2021-00358, the Commission found that because Jackson Purchase Energy received an increase to the customer charge of $3.95 less than three years prior, the incremental increase in that case should not exceed the amount granted in the 2019 Rate Case. If not confirmed, explain in detail why not.

e. Provide a list of all electric utilities in Kentucky, with the corresponding monthly residential customer charge, residential volumetric charge, average bill, and rank the utilities from lowest to highest average bill. Ensure to include Jackson Purchase Energy's proposed residential customer charge, residential volumetric charge, average bill, and rank based upon its proposed revenue requirement.

Response 18a: The proposed increase moves the customer charge less than 1/3 of the way across the gap between the current customer charge ($20.35) and the cost-based customer charge ($53.45) from the cost-of-service study. Jackson Purchase notes that the increase to the total residential billings, rather than one component of those billings, is more relevant for the purposes of assessing gradualism. Examined another way, Jackson Purchase's current customer charge is only 38 percent ($20.35 / $53.45) of what it should be in order to recover the actual fixed customer-related costs of serving residential members of the cooperative. Increasing the charge by only 1/3 of the supported increase is consistent with the principle of gradualism because it moves the customer charge from 38 percent of what it should be to 57 percent of what it should be according to the cost-of-service study.

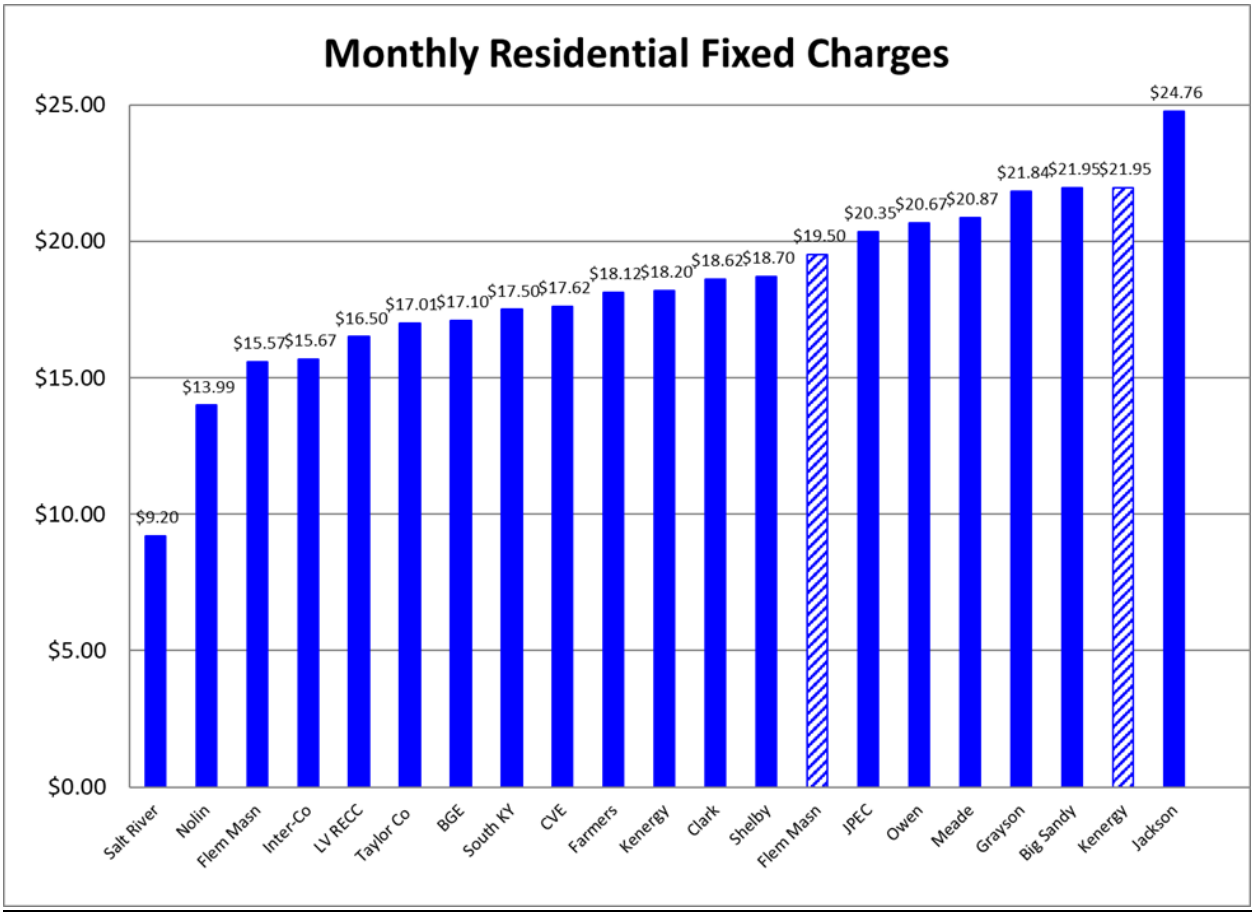
Response 18b: Yes, Jackson Purchase considered different rate design options for achieving the necessary revenue increase. The Board decided to adopt the proposed approach in order to generally balance the impacts of the proposed increases across the classes and to move towards cost-based rates.

Response 18c: Jackson Purchase did not consider a phased increase, because addressing financial metrics and cash flow challenges is a high priority and doing so sooner than later is in the best interest of the members.

Response 18d: Confirmed.

Response 18e: Jackson Purchase did not compile all the requested information during the development of this case. The relevant information that the cooperative did compile as of June 1, 2024, which only includes the monthly residential customer charge for electric distribution cooperatives in Kentucky, from publicly available data on the Commission's website, follows.

[The charges for the hatched bars are proposed and the solid bars are in effect.]


Monthly Residential Fixed Charges
$25.00
$20.00
$15.00
$10.00
$5.00
$0.00
$9.20
$13.99
$15.57
$15.67
$16.50
$17.01
$17.10
$17.50
$17.62
$18.12
$18.20
$18.62
$18.70
$19.50
$20.35
$20.67
$20.87
$21.84
$21.95
$21.95
$24.76
Salt River
Nolin
Flem Masn
Inter-Co
LV RECC
Taylor Co
BGE
South KY
CVE
Farmers
Kenergy
Clark
Shelby
Flem Masn
JPEC
Owen
Meade
Grayson
Big Sandy
Kenergy
Jackson

Jackson Purchase Energy Corporation
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Request 19: Refer to the Application, paragraph 25. Jackson Purchase Energy asserts that even though it had a general rate increase case in 2021, with a rate increase awarded in 2022, due to increased expenses it is in the cooperative's best interest to increase rates again. Explain in detail and provide all examples of cost control measures that Jackson Purchase Energy has implemented since the last general rate case, if any.

Response 19: Please refer to the Application, Exhibit 8, Direct Testimony of Greg Grissom, page 5.

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Request 20: Refer to the Application, paragraph 29.

a. Jackson Purchase Energy asserts that it is requesting the rate case expense to be allowed recovery in the rates and amortized over a three-year period.

   i. Provide the total rate case expense that has been accrued thus far. Consider this a continuing request.

   ii. Provide a breakdown of the total rate case expense that has been accrued thus far by category. Consider this a continuing request.

   iii. Provide copies of invoices supporting the level of incurred rate case costs to date and supply such new invoices as they become available.

   iv. Provide the estimated total rate case expense.

   v. Provide a breakdown of the estimated total rate case expense.

   vi. Explain whether Jackson Purchase Energy intends to include charges for its own employees to work on the rate case during regular business hours.

Response 20a(i)-20a(v): Please refer to the response to Commission Staff's First Request for Information, Item 37(a)-(b), as well as the Excel spreadsheet provided in response to that request. Jackson Purchase will continue to provide updates throughout the duration of this case.

Response 20vi: Jackson Purchase does not intend on including charges for internal employees to work on the case during normal business hours.

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Request 21: Refer to the Application, Exhibit 1. Jackson Purchase Energy states that without a rate increase its "insufficient rate structure will continue to put it at risk of non-compliance with its lenders…"

a. Explain in detail the various lender requirements.

b. Provide Jackson Purchase Energy's rate structure in comparison to its lender requirements for the years 2014 – 2024.

Response 21(a): Please refer to the Commission Staff's First Request for Information, Item 55.

Response 21(b): The rate structure does not "compare" to the lender requirements. The intent of the cited phrase in the Application, Exhibit 1 is to explain that the total revenue generated from rates is insufficient for achieving the financial metrics required by the lenders described in the response to part (a).

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Request 22: Refer to the Application, Exhibit 4. Explain why Jackson Purchase Energy is proposing the same monthly customer charge and energy volumetric rate for both the residential customers and small commercial single phase customers. Ensure to discuss how it is fair, just, and reasonable to force residential customers to pay the same rate as commercial customers.

Response 22: Please see the response to Commission Staff's Second Request for Information, Item 13.

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Attorney General's First Request for Information

Request 23: Refer to the Application, Exhibit 5.

a. Confirm that the average residential customer, using 1,116 kWh of electricity, will have a $13.95 increase, or 8.1%, to its monthly electric bill if the Commission grants Jackson Purchase Energy's rate increase request.

b. Provide what the average residential customer's total monthly electric bill will be if the Commission grants Jackson Purchase Energy's rate increase request.

Response 23a: Confirmed. See Application, Exhibit 10, Direct Testimony of John Wolfram, Exhibit JW-9.

Response 23b: The average residential customer's electric bill is estimated to be $162.58 per month if the Commission approves the requested rate revisions.

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Request 24: Refer to the Direct Testimony of Greg Grissom ("Grissom Testimony") at 3. Mr. Grissom states that Jackson Purchase Energy provides retail electric service to approximately 30,000 services. Reconcile this assertion with the Application, paragraph 5, which states that the Company has 23,000 customers.

Request 24: The term "services" refers to Jackson Purchase's approximate meter count, while the term "customers" refers to the approximate number of individual members. One member may have multiple meters on Jackson Purchase's system.

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Request 25: Refer to the Grissom Testimony at 4. Mr. Grissom states that during the test year the Company's average residential customer used 1,128 kWh of electricity per month. Refer also to the Application, Exhibit 5, Notice of Proposed Adjustment to Retail Electric Rates, which provides the proposed dollar and percent increase for the residential customers based upon an average usage of 1,116 kWh. Reconcile the two different average residential customer electricity usage amounts of 1,128 kWh and 1,116 kWh.

Response 25: The difference stems from the manner of categorization. The 1,128 kWh stated by Mr. Grissom represents the residential amounts as reported on the RUS Annual Operating Report (for which the categories are Residential excluding Seasonal, Residential Seasonal, Irrigation, Comm & Ind 1000 KVA or Less, Comm & Ind Over 1000 KVA, Public Street and Highway Lighting, and Other Sales to Public Authorities). The 1,116 kWh stated in the Application represents the residential amounts more strictly categorized by the rate classes used in the cost of service study – so here the residential includes residential rate R plus any residential net metering customers. Note that Irrigation usage is separated in the RUS Annual Report but not in the COSS since the irrigators do not have a dedicated rate schedule separate from residential.

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Request 26: Refer to the Grissom Testimony at 4. Mr. Grissom states that, "Jackson Purchase has seen additional significant increased costs in many areas of the business, particularly in material costs, labor costs, and right-of-way ("ROW") maintenance expenses."

a. Explain whether Jackson Purchase Energy handles ROW internally or if it uses contractors.

b. Provide Jackson Purchase Energy's ROW maintenance plan, including the trimming cycle.

c. Explain whether Jackson Purchase Energy issues requests for proposal in order to secure the most economically favorable ROW contracts.

d. Provide copies of all responses to the ROW requests for proposal for the last five years.

e. Explain in detail whether Jackson Purchase Energy coordinates its ROW program with the Kentucky Transportation Cabinet/Kentucky Department of Highways ROW program, in order to mitigate expense for the Company's customers. If not, explain why not. Provide all related documentation regarding the same.

f. Explain in detail whether Jackson Purchase Energy works with other regional electric utilities to develop regional bids for ROW management, which could create significant cost savings. If not, explain in detail why not.

g. Explain in detail whether Jackson Purchase Energy has taken any significant steps to address ROW management expenses since its last 2021 rate case.

h. The Company states that other significant adjustments to the test year include material costs and labor costs. Provide a detailed discussion of why there have been significant increases in each of the referenced categories.

Response 26a: Jackson Purchase utilizes outside contractors for right-of-way (ROW) maintenance. Currently, Jackson Purchase has a two-year contract with Townsend Tree Services to perform the ROW maintenance.

Response 26b: Please see the attached "Jackson Purchase's Procedure 403, Right of Way Maintenance."

Response 26c: Jackson Purchase issues a request for proposals near the end of the current contract. In 2023, Jackson Purchases issued a request for proposals and the contract for 2024/2025 with Townsend Tree Service was the most economical.

Response 26d: These documents are being provided under seal pursuant to a request for confidential protection.

Response 26e: Jackson Purchase does not coordinate its ROW program with the Transportation Cabinet.

Response 26f: Jackson Purchase discussed the possibility of combining circuit mileage for bids with other electric cooperatives. This was also discussed with one ROW contractor. The response received from the contractor was that if multiple cooperatives combine the circuits, the contractor would not have the resources to complete a project of that size.

Response 26g: Jackson Purchase has established a five-year ROW cycle to maintain its approximately 1,800 miles of lines. Jackson Purchase has adjusted its clearing specifications according to the area and terrain. Given the yearly ROW budget, Jackson Purchase has planned its circuit cutting to cover as many miles as possible to maintain safety and reliability. Jackson Purchase is selective in the trees that it removes on its circuit, so more miles can be cut. However, Jackson Purchase must balance the current removal of trees with the understanding that the trees that are left will need to be removed in the future.

Response 26h: Just like all other industries, the rising cost of inflation since the COVID-19 pandemic has caused shortages in labor and material. The cost of supplies that Jackson Purchase uses in all areas of its business has risen. Jackson Purchase is providing an Excel file separately showing the increases in commonly-used items. Please see the response to Item 31 for a detailed explanation of the labor costs.

ATTACHMENT AG 1-26b

PROCEDURE NO. 403

RIGHT OF WAY MAINTENANCE

I. OBJECTIVE

To create a procedure that will establish and maintain JPEC right-of-way that is required for all new and existing primary distribution lines.

II. PROCEDURE

In order to construct and maintain a reliable electric supply, JPEC has established a four (4) year right-of-way schedule (trim cycle) for nearly 1800 miles of primary lines. Right-of-way clearing and maintenance consists of cutting, trimming, mowing and herbicide program. This procedure for tree clearances apply at the time of pruning and clearing and are intended to protect the wires under normal operating conditions.

RIGHT-OF-WAY CLEARING STANDARDS

1. Right-of-Way shall be a minimum of forty (40) feet wide for two and three phase lines and thirty (30) feet wide for single phase lines.
2. Effective tree clearance for line reliability is dependent on the type of tree, its growth rate and habit.
3. Trimming for On Right-of-Way Trees –
    a. Clearance shall be accomplished by ground cutting and removing all tree species, shrubs, brush, vines, etc. from within the right-of-way.
    b. Low-growth tree species or shrubs in residential areas that will not exceed the height of the communication lines, without trimming, may be allowed to remain if the vegetation does not pose a hazard to JPEC employees or equipment in the construction and/or maintenance of JPEC facilities.
    c. Where trimming of residential or landscape trees become necessary, trees shall be trimmed to provide a minimum of four (4) years of clearance.
    d. Trees shall be trimmed ground-to-sky with arboricultural approved trimming methods. One such method is ANSI A300 which is published by the Tree Care Industry Association (TCIA).
    e. Special clearances may be needed at times because of field conditions.
4. Trimming Along Distribution Right-Of-Way Edge or Off Right-Of-Way Trees –
    a. Trees shall be trimmed ground-to-sky with arboricultural approved trimming methods as referenced in ANSI A300 to obtain the proper clearance.
    b. JPEC shall work with property owners in the removal of danger trees. A danger tree is any tree that is off the right-of-way that, due to decay, leaning toward the line, or is exhibiting other abnormal characteristics, could fall and come into contact with supply lines.

5. Shaping or rounding-over trees beyond what is described in ANSI A300 to achieve the desired conductor/vegetation clearance shall not be performed.
6. Only trees that are directly involved with JPEC's overhead lines, as defined by this procedure shall be trimmed. Trimming trees for privately owned lines, other utility lines, or consumer lines or wiring is not permitted.
7. JPEC shall disconnect and remove a member's secondary or service wire if the member wishes to remove a tree that has the potential of falling onto the line.
8. JPEC should not trim trees solely for area lighting illumination.
9. All low growing desirable species, if present, may be left unless:
    a. they create clearance problems,
    b. mechanical, non-selective equipment (e.g. mowing) is used, or
    c. they block access to the rights of way or prevent facilities maintenance.
10. All stumps from manual clearing operations shall be treated with herbicides approved by JPEC to prevent re-growth.

Special conditions may exist where JPEC or its representative shall work with a member to produce the most desirable outcome.

III. RESPONSIBILITY

The office or designee of the Engineering and Operations Department will be responsible for the administration of this procedure.

ACCEPTED: 01/01/2020
REVISED:

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
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Attorney General's First Request for Information

Request 27: Refer to the Grissom Testimony at 5. Mr. Grissom states that, "Jackson Purchase has experienced low customer growth and unpredictable energy sales, particularly in the residential class which makes up almost sixty (60) percent of Jackson Purchase's energy sales." Due to these issues, explain in detail whether Jackson Purchase Energy has ever discussed merger with any other similarly situated rural cooperative in order to streamline operations and obtain economies of scale. If not, explain in detail why not.

Response 27: Jackson Purchase has not discussed merging with any other rural cooperative. Please see the response to Item 26f for a discussion of the response from contractors on working with other cooperatives.

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Attorney General's First Request for Information

Request 28: Refer to the Grissom Testimony at 5.

a. Mr. Grissom states that, "Jackson Purchase transferred a $1.975 million deposit from one of its direct serve members to be held by Big Rivers Electric Corporation ("Big Rivers") during a time of mandated high interest rates on consumer deposits." Explain how this transfer assisted in avoiding additional interest expense.

b. Mr. Grissom states, "Jackson Purchase has kept staffing at the lowest level possible to still maintain safe and reliable service."

    i. Provide the number of full-time employees for each of the years 2014 – 2024.

    ii. Provide the number of part-time employees for each of the years 2014 – 2024.

c. Mr. Grissom states that, "Jackson Purchase has spent less than the budgeted amount for ROW maintenance for 2022 and 2023 because the allocated amounts were needed elsewhere to maintain financial health."

    i. Explain in detail, and provide a breakdown, of what the ROW maintenance expense funds were used on instead of ROW maintenance.

    ii. Further explain why Jackson Purchase Energy should be awarded increased ROW maintenance funds if there is no guarantee that those funds will be used for ROW, but instead may be used elsewhere

d. Provide the total monetary amount of the grant that the Federal Emergency Management Agency ("FEMA") awarded Jackson Purchase Energy for a large windstorm in March

2023. Also, provide the monetary amount that Jackson Purchase Energy expended on the large windstorm in March 2023.

e. Provide a copy of the 2022 KRTA data that Mr. Grissom refers to concerning Jackson Purchase Energy's cooperative size rank.

Response 28a: In 2023, interest expense on consumer deposits was mandated by the Commission at 4.34%; when Jackson Purchase transferred Blockware's deposit to Big Rivers, interest expense on that deposit was no longer incurred by Jackson Purchase.

Response 28b(i) and (ii): Please see the Excel file provided separately.

Response 28c(i): Some of the funds that were originally budgeted for ROW maintenance in 2022 and 2023 were instead used to ensure that sufficient cash was on-hand to cover various other operating expenses and debt payments. A breakdown of those expenses cannot be provided, as there were not specific expenses or projects that those funds were used for.

Response 28c(ii): Assuming sufficient revenue is generated through its rate structure, Jackson Purchase intends on achieving a 5-year ROW maintenance cycle to ensure more reliable service to its members as well as more maintainable ROW circuits in the future.

Response 28d: Please refer to the response to Commission Staff's First Request for Information, Item 1(b), second bulleted response.

Response 28e: This attachment is being filed under seal pursuant to a request for confidential protection.

ATTACHMENTS ARE EXEL SPREADSHEETS AND UPLOADED SEPARATELY

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 29: Refer to the Direct Testimony of Meredith Kendall ("Kendall Testimony"), at 2. Ms. Kendall discusses Jackson Purchase Energy's debt portfolio which includes the following lenders: RUS, Cooperative Finance Corporation ("CFC"), CoBank, and FFB.

a. Provide the TIER and OTIER that are required by all of Jackson Purchase Energy's loan contracts.
b. Confirm or deny that normally loans that a rural electric cooperative enters into only require a TIER of 1.25X. If denied, explain in full detail what TIER is generally required.
c. If (c) is confirmed, other than Commission precedent, provide the justification and reason a higher TIER than what is required by the loan contract terms is necessary.
d. Explain how Jackson Purchase Energy utilizes the additional funds that the Commission awards that are above and beyond the required TIER and OTIER amounts per the loan contract terms, and how the company accounts for these funds.
e. If Jackson Purchase Energy were to ask for a 1.25X TIER, provide the rate increase that the Company would be seeking in the pending case, all else equal.

Response 29a: Please refer to Commission Staff's First Request for Information, Item 55.

Response 29b: Confirmed. Normally loans entered into by co-op only require a TIER of 1.25X.

Response 29c: The loan covenants establish minimum requirements for financial metrics like TIER. Jackson Purchase considers it prudent to establish rates that permit the achievement of

financial metrics above these minimums, and the Commission has supported this view in every distribution cooperative rate case of which the cooperative is aware.

Response 29d: Jackson Purchase does not accept the premise of the question that the amounts above the minimum lender-required TIER or OTIER are "additional funds" for which separate allocation or tracking is warranted. On the contrary, Jackson Purchase uses TIER in order to establish its total revenue requirement, consistent with standard Commission practices and traditional ratemaking methods. The cooperative is entitled to a reasonable opportunity to recover its prudently-incurred costs and is also entitled to earn a fair and reasonable rate of return on its capital investments. All of Jackson Purchase's rate revenue allows the cooperative to recover its costs, earn a reasonable return on its investment, and manage contingencies related to providing safe, reliable, and cost-effective electric service to its members. The Commission has found in repeated distribution cooperative rate filings in recent years that a TIER of 2.00 provides that reasonable return. The Commission also established the OTIER cap of 1.85 for cooperatives using the Streamlined Procedure Pilot Program, which indicates an expectation by this Commission that cooperatives like Jackson Purchase should achieve financial metrics above the minimum thresholds established by the lenders. There are no "additional funds" and thus no special or separate "accounts for these funds" exist.

Response 29e: All else being equal, the revenue deficiency at a target TIER of 1.25 is $3,592,797.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 30: Refer to the Kendall Testimony at 6.

a. Provide a copy of the special contract with Blockware Mining, LLC ("Blockware").

b. Explain why Jackson Purchase Energy only retains $0.50/MWh from energy sales to Blockware.

Response 30a: Please see attached (contract and first amendment to the contract).

Response 30b: Jackson Purchase only retains $0.50/MWh from energy sales to Blockware because that was the agreed-upon distribution adder at the time that the contract was negotiated and signed.

ATTACHMENT AG 1-30

AGREEMENT FOR ELECTRIC SERVICE

THIS AGREEMENT FOR ELECTRIC SERVICE ("Agreement") is made and entered into as of the 12th day of April, 2021, between **JACKSON PURCHASE ENERGY CORPORATION**, a Kentucky rural electric cooperative corporation, with its principal office located at 2900 Irvin Cobb Dr, Paducah, KY 42003 ("Seller"), and **BLOCKWARE MINING, LLC**, an Illinois limited liability company ("Customer"), with a service address at the facility Customer intends to construct and operate at a parcel within 5501 Commerce Drive, Paducah, Kentucky 42001 (the "Facility"). Seller and Customer are individually referred to herein as a "Party" and collectively as the "Parties."

WHEREAS, Seller will provide retail electric service to Customer under the terms of this Agreement;

WHEREAS, Seller will purchase the electric power and energy for resale to Customer from Big Rivers Electric Corporation ("Big Rivers") under a wholesale power contract dated October 14, 1977, as has been and may be amended from time to time (the "Wholesale Power Agreement"); and

WHEREAS, Customer is agreeable to locating the Facility in the Commonwealth of Kentucky contingent upon Seller providing the electrical requirements for the Facility under the terms of this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the Parties agree as follows:

ARTICLE I
GENERAL OBLIGATIONS

1.01 Basic Obligations of the Parties. Seller shall supply, sell, and deliver to Customer, and Customer shall accept and pay for all of the electric power and energy Customer may need for the operation of the Facility, up to the Maximum Contract Demand as defined in Section 2.03(b), subject to the terms and conditions set forth herein. The electric service provided hereunder is subject to the rules, regulations, and orders of the Public Service Commission of Kentucky (the "Commission") as may be applicable and effective from time to time. Except as otherwise provided herein, this Agreement contains the exclusive terms on which Seller will provide electric service to the Facility during the term of this Agreement.

1.02 Membership. Customer shall be a member of Seller, and shall be bound by applicable rules and regulations as may from time to time be adopted by Seller.

1.03 Performance by Seller. Big Rivers shall be entitled to the benefit of each covenant undertaken by Customer in this Agreement, and Big Rivers may enforce any such covenant by action in its own name or may require Seller to enforce such covenant for and on behalf of Big Rivers.

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Executive Director

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1.04 Description of the Facility. The Facility shall consist of Customer's facilities at a parcel within 5501 Commerce Drive, Paducah, KY for the purpose of hosting mining rigs for mining Bitcoin.

ARTICLE II
SERVICE CHARACTERISTICS

2.01 Delivery Point and Character of Service. The "Delivery Point" of the electric power and energy made available under this Agreement shall be the point of connection of Customer's bus with Big Rivers' step-down transformers. The electric power and energy delivered under this Agreement will be in the form of three-phase alternating current (60 hertz) at nominal 12.470 kV voltage level.

2.02 Service Restriction. Customer shall not use the electric power and energy furnished hereunder as an auxiliary or supplement to any other source of power and shall not sell electric power and energy purchased hereunder.

2.03 Contract Demand.

(a) "Billing Demand" shall be considered equal to the highest integrated 30-minute clock-hour non-coincident peak demand during a billing month; provided, however, that the Billing Demand for any billing month shall not be less than the Peak Demand as established in Exhibit C.

(b) Customer's maximum Billing Demand in any billing month during the Term of this Agreement (the "Maximum Contract Demand") shall be as follows:

From the Effective Date of this Agreement through May 31, 2022 (the "Initial Period"), the Maximum Contract Demand shall be [redacted]

For each twelve-month period following the end of the Initial Period (each such period running from June 1 through May 31 of the following calendar year, and each such period being a "Planning Year"), the Maximum Contract Demand shall be equal to the Peak Demand for that Planning Year as established in Exhibit C.

Upon Seller providing advance written notice of at least twelve months of its desire to raise the Maximum Contract Demand above [redacted] and upon Seller installing, or causing to be installed, the facilities required for the additional capacity listed on Exhibit A, the Maximum Contract Demand after such installation shall be [redacted]

(c) After the Peak Demand for a Planning Year has been established, the parties may mutually agree to increase the Peak Demand for the Planning Year, subject to Big Rivers' consent, the availability of capacity, and tl
then-existing transmission facilities. Seller shall

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Agreement to supply capacity in excess of the Maximum Contract Demand, measured as specified in Section 2.03(b) of this Agreement.

2.04 System Disturbances; Obligation for Damages.

(a) A "System Disturbance" shall be deemed to exist if the use of power by Customer directly or indirectly results in a risk of harm to human beings or material damage to or substantial interference with the functioning of Big Rivers' generating system or transmission system, Seller's distribution system, or the plant, facility, equipment or operations of any customer of one of Big Rivers' distribution cooperative members. A System Disturbance includes, but is not limited to: (i) a level of current harmonic total demand distortion ("TDD") measured at the Delivery Point that exceeds the limits on TDD described in IEEE Standard 519, Section 10; and (ii) a use of capacity and energy in such a manner that causes a current imbalance between phases greater than five percent at the Delivery Point.

(b) In its role as Local Balancing Area Operator in the Midcontinent Independent System Operator, Inc. ("MISO") and reader of the meters serving Seller, Big Rivers shall have primary responsibility for determining the existence and source of System Disturbances. If Big Rivers reasonably believes that Customer is responsible for a System Disturbance, it shall provide notice to Seller and Customer, and Customer may take, but shall not be obligated to take, appropriate action at its sole expense to cure, correct or suppress such System Disturbance. If the Customer declines for any reason to take action to correct the System Disturbance, then Seller shall undertake, or cause Big Rivers to undertake, appropriate action to cure, correct or suppress such System Disturbance. If Customer is determined to be the source of the System Disturbance, Customer shall be obligated to reimburse Seller for all reasonable costs incurred by Seller or Big Rivers to cure, correct or suppress such System Disturbance.

(c) Neither Seller nor Big Rivers shall have any responsibility for damage to any property, or to any equipment or devices connected to Customer's electrical system on Customer's side of the Delivery Point to the extent that such damage results from acts or omissions of Customer, its employees, agents, contractors or invitees, or malfunction of any equipment or devices connected to Customer's electrical system on Customer's side of the Delivery Point. The electric power and energy supplied under this Agreement is supplied upon the express condition that after it passes the Delivery Point it becomes the responsibility of Customer, and neither Seller nor Big Rivers shall be liable for loss or damage to any person or property whatsoever, resulting directly or indirectly from the use, misuse or presence of said electric power and energy on Customer's premises or elsewhere, after it passes the Delivery Point except where such loss or damage shall be shown to have been occasioned by negligence of Seller or Big Rivers, their agents or employees.

2.05 Power Factor. Customer shall maintain a power fa
nearly as practicable to unity. Power factor during normal opera

ninety percent (90%). If Customer's power factor is less than 90% at time of maximum load, Seller reserves the right to require Customer to choose either (a) installation at Customer's expense of equipment which will maintain a power factor of 90% or higher; or (b) adjustment of the maximum monthly metered demand for billing purposes in accordance with the following formula:

$$\frac{\text{Maximum Actual Measured Kilowatts} \times 90\%}{\text{Power Factor (\%)}}$$

2.06 Metering.

(a) The metering equipment necessary to register the electric demand and energy for this service shall be furnished, installed, operated, and maintained by Seller or Big Rivers, and shall be and remain the property of Seller or Big Rivers.

(b) Each meter shall be read on or about the first day of each month, or such other day as the Parties may mutually agree upon, by a representative of Seller and may be simultaneously read by a representative of Customer should Customer so elect.

(c) All inspections and testing of metering equipment shall be performed in accordance with the Commission's applicable rules and regulations.

2.07 Easements and Facilities Provided by Customer.

(a) Customer shall furnish, operate, and maintain (or cause to be furnished, operated, and maintained) such facilities and equipment as may be necessary to enable it to receive and use electric power and energy purchased hereunder at and from the Delivery Point.

(b) Customer shall provide or cause to be provided, without cost to Seller or Big Rivers, the following facilities which are or may be necessary for Seller to supply the electric consuming facilities of Customer with retail electric service and for Big Rivers to supply Seller with the corresponding wholesale electric service:

(i) Adequate sites for the construction and erection of such new substations and other facilities and future alterations to such new facilities as may from time to time be necessary to serve Customer, at such locations and of such dimensions as mutually agreed upon with the fee simple title thereto, rough graded to Seller's or Big Rivers' requirements, as may be from time to time required by Seller or Big Rivers;

(ii) Easements for rights-of-way upon Customer's property at such locations and of such dimensions as determined by Seller and which are necessary for the construction of facilities which Seller or Big Rivers must furnish to provide electric service under this Agreement. If Customer wishes to move any such facilities in the future, Seller shall provide alternate satisfactory locations so long as at Customer's expense;

(iii) An easement for ingress and egress for the exercise by Seller or Big Rivers of Seller's rights under this Agreement; and

(iv) Facilities for Big Rivers' metering equipment.

2.08 Facilities Provided by Seller. Seller shall furnish or cause to be furnished, at no extra charge to Customer, all of the facilities required for the delivery of electric power and energy to the Delivery Point, including the following:

(a) The facilities listed on Exhibit A hereto; and

(b) Metering, communications, relaying, control circuits, and associated equipment necessary to properly measure, control, and coordinate the delivery of electrical power and energy between Seller's and Customer's facilities.

2.09 Operation and Maintenance of Facilities.

(a) Seller shall construct, operate, and maintain, or cause to be constructed, operated, and maintained, all facilities and equipment owned by it or by Big Rivers and required to supply retail electric service to Customer in accordance with the terms of this Agreement.

(b) Customer shall construct, operate, and maintain, or cause to be constructed, operated, and maintained, all facilities and equipment owned by it in accordance with the applicable provisions of the National Electrical Safety Code and all other applicable laws, codes, and regulations; provided, however, that Seller shall have no duty to inspect such facilities for compliance therewith.

(c) Nothing in this Agreement shall be construed to render either Party liable for any claim, demand, cost, loss, cause of action, damage, or liability of whatsoever kind or nature arising out of or resulting from the construction, operation, or maintenance of such Party's electric system or electric systems connected to such Party's electric system.

2.10 Right of Removal. Any and all equipment, apparatus, devices, or facilities placed or installed, or caused to be placed or installed, by either Party on or in the premises of the other Party shall be and remain the property of the Party owning and installing such equipment, apparatus, devices, or facilities regardless of the mode or manner of annexation or attachment to real property of the other. Upon the termination of this Agreement, the owner thereof shall have the right to enter upon the premises of the other and shall within a reasonable time remove such equipment, apparatus, devices, or facilities.

2.11 Termination Charges. If this Agreement expires or is terminated for any reason, Customer shall pay Seller, in addition to any other obligations Customer may have to Seller upon the expiration or termination of this Agreement, a "Termination Charge" and an "EDR Termination Charge" in accordance with Exhibit B hereto.

2.12 Credit Support for Termination Charges.

(a) As security for payment of the Termination Charge, Customer shall provide Big Rivers at the time this Agreement is signed and thereafter maintain a cash deposit or an irrevocable bank letter of credit acceptable to Big Rivers equal to the amount of the Termination Charge. Semi-annually, and upon the addition or truing up of any charges to the Termination Charge, the Parties shall adjust the deposit or bank letter of credit to reflect changes in the amounts of the obligations of Customer secured by the deposit or bank letter of credit.

(b) As security for payment of the EDR Termination Charge, Customer shall provide Big Rivers at the time Customer becomes entitled to an Economic Development Rate Credit and thereafter maintain a cash deposit or an irrevocable bank letter of credit acceptable to Seller equal to the total amount of the Economic Develop Rate Credits which remain subject to refund per Section C4 of Exhibit C. Annually, Customer and Big Rivers shall adjust the deposit or bank letter of credit to reflect changes in the amounts of the obligations of Customer secured by the deposit or bank letter of credit.

2.13 Ancillary Services; Transmission. Seller shall be responsible for procuring transmission and ancillary services needed to deliver capacity and energy to Customer under this Agreement, subject to the rates and other terms hereunder.

2.14 Curtailment; Interruption. [redacted]

ARTICLE III
PAYMENT

3.01 Rates. During the Term of this Agreement, Customer shall take service from Seller at the rates set forth in Exhibit C hereto and under any applicable tariffs of Seller, as they may be amended from time to time, or any successor tariff(s), all of which are incorporated herein by reference. Seller shall take service from Big Rivers under Big Rivers' Large Industrial Customer Expansion Rate ("LICX") tariff, the current version of which is attached hereto as Exhibit D, as such tariff may be amended from time to time, and any other applicable tariffs of Big Rivers, or any successor tariff(s), all of which are incorporated herein by reference. Notwithstanding the foregoing, to the extent any provision of this Agreement, including the exhibits hereto, are inconsistent with the tariffs referenced in this section, the provisions of the Agreement shall prevail.

3.02 Taxes. Customer shall pay all taxes, charges, fees, or assessments now or hereafter applicable to electric service hereunder.

3.03 Billing. Bills for service hereunder shall be paid the Seller as follows:

Such payments shall be due on the 15th day of each month for service furnished during the preceding monthly billing period (the "Due Date"). If payment in full is not paid on or before the Due Date, or if Customer fails to maintain adequate credit support or payment security as required hereunder, Seller may discontinue service to the Customer without further action on the part of Seller by giving the Customer written notice at least ten (10) calendar days in advance of its intention to do so; provided, however, that such discontinuance of service shall not relieve the Customer of any of its obligations under this Agreement or limit Seller's other remedies under this Agreement. Simple interest equal to the then-effective prime commercial lending rate as published in the "Money Rates" section of *The Wall Street Journal* plus one percent (1%) shall apply to any unpaid amounts from the Due Date until paid.

In the event any portion of the bill is in bona fide dispute, as a result of metering-related issues or otherwise, Customer shall notify Seller on or before the Due Date of the disputed amount and the reason therefor and shall pay the undisputed amount. The parties shall attempt in good faith to resolve the dispute. If the Parties are unable to agree upon a correct amount within ten (10) calendar days of Customer's written notice of the dispute, then the disputed amount shall become due on the later of the Due Date or the end of that ten (10) day period.

3.04 Credit Support for Monthly Billing Obligations

(a) Customer shall provide, prior to the Service Commencement Date defined in Section 11.01, an irrevocable bank standby letter of credit representing [redacted] of estimated billing, initially being the amount of [redacted] as security for the payment of its monthly billing obligations. In the event customer fails to pay any monthly billing invoice by the Due Date, after notifying Customer of its intent to do so Seller may, in addition to and without limiting any other remedies available to it, call on the standby letter of credit provided in this subsection or any other security deposit, payment security, or credit support on any other agreement between Customer and Seller for payment provided by Customer to satisfy any unpaid invoices. During the Initial Period, the level of credit support required by this section will be reset at the start of each calendar quarter. Thereafter, the level of credit support required by this section will be reset at the start of each Planning Year. Customer shall provide the level of credit support required by Seller within 15 calendar days after each such reset.

(b) In addition to the rights and obligations in Section 3.04(a), in the event Customer fails to pay any monthly billing invoice by the Due Date, or Customer's credit rating falls below [redacted] from S&P or Fitch, or below [redacted] from Moody's, then Customer shall provide an irrevocable bank standl [redacted] of estimated billing, initially being security for payment of its monthly billing obligat

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such event. If Customer fails to pay any invoice for service by the Due Date, after notifying Customer of its intent to do so Seller may, in addition to and without limiting any other remedies available to it, call on the standby letter of credit provided for in this subsection or any other security deposit, payment security, or credit support on any other agreement between Customer and Seller for payment provided by Customer to satisfy that unpaid invoice. During the Initial Period, the level of credit support required by this section will be reset at the start of each calendar quarter. Thereafter, the level of credit support required by this section will be reset at the start of each Planning Year. Customer shall provide the level of credit support required by Seller within 15 calendar days after each such reset.

ARTICLE IV
CONTINUITY OF SERVICE

4.01 Continuity of Service. Seller shall use reasonable diligence to provide a constant and uninterrupted supply of electric power and energy hereunder. However, Seller does not guarantee uninterrupted service from maintenance and similar temporary outages or a Force Majeure Event, and neither Seller nor Big Rivers shall be responsible for damages to Customer occasioned by maintenance and similar temporary outages or a Force Majeure Event, as defined in Section 4.02 of this Agreement.

4.02 Force Majeure. In the event a Party's performance of this Agreement is limited or prevented in whole or in part by Acts of God, strikes, labor trouble, acts of the public enemy, wars, blockades, insurrections, riots, pandemics, epidemics, landslides, lightning, earthquakes, fires, storms, floods, washouts, arrests and restraints of the government (whether federal, state, or local, or civil or military), civil disturbances, explosions, breakage of or accident to machinery, equipment or transmission lines, or inability to obtain necessary materials, supplies, or permits due to existing or future rules, regulations, orders, laws or proclamations of governmental authorities (whether federal, state, or local, or civil or military), or any other cause beyond the reasonable control of the Parties hereto whether or not specifically provided herein (each a "Force Majeure Event"), the obligations (other than payment obligations) of both Parties shall be suspended to the extent made necessary by such Force Majeure Event; provided that the affected Party gives notice and reasonably full particulars of such Force Majeure Event, first by telephone and then confirmed in writing, to the other Party within a reasonable time after the occurrence of the Force Majeure Event. Each Party will, in the event it experiences a Force Majeure Event, use all commercially reasonable efforts to eliminate the effects of such Force Majeure Event on its performance as soon as reasonably possible; provided that nothing contained herein may be construed to require a Party to prevent or to settle a labor dispute against its will.

ARTICLE V
RIGHT OF ACCESS

5.01 Duly authorized representatives of the Seller shall be permitted to enter the Customer's premises at all reasonable times in order to carry out t

5.02 Customer shall furnish to Seller such reports and information concerning the matters addressed in or matters arising out of this Agreement or any exhibit hereto as the Seller may reasonably request from time to time.

ARTICLE VI
EVENTS OF DEFAULT AND REMEDIES

6.01 Events of Default. Each of the following constitutes an "Event of Default" under this Agreement:

(a) Failure by Customer to make any payment in accordance with this Agreement within 5 days of its due date;

(b) Written notice of a Failure of a Party to perform any material duty imposed on it by this Agreement, including but not limited to the failure to maintain adequate credit support as required in Sections 2.12 and 3.04;

(c) Any attempt by a Party to transfer an interest in this Agreement other than as permitted under Article X;

(d) Any filing of a petition in bankruptcy or insolvency, or for reorganization or arrangement under any bankruptcy or insolvency laws, or voluntarily taking advantage of any such laws by answer or otherwise, or the commencement of involuntary proceedings under any such laws by a Party and such petition has not been withdrawn or dismissed within 60 days after filing;

(e) Assignment by a Party for the benefit of its creditors; or

(f) Allowance by a Party of the appointment of a receiver or trustee of all or a material part of its property and such receiver or trustee has not been discharged within 60 days after appointment.

6.02 Remedies. Following the occurrence and during the continuance of an Event of Default by either Party, the non-defaulting Party may, in its sole discretion, elect to terminate this Agreement upon written notice to the other Party, or to seek enforcement of its terms at law or in equity. Remedies provided in this Agreement are cumulative. Nothing contained in this Agreement may be construed to abridge, limit, or deprive either Party of any means of enforcing any remedy either at law or in equity for the breach or default of any of the provision herein, except as provided in Section 6.03 of this Agreement.

6.03 **LIMITATION OF DAMAGES. EXCEPT AS EXPRESSLY PROVIDED OTHERWISE IN THIS AGREEMENT, UNDER NO CIRCUMSTANCES WOULD CUSTOMER OR SELLER (OR BIG RIVERS), OR THEIR RESPECTIVE AFFILIATES, DIRECTORS, OFFICERS, MEMBERS, MANAGERS, EMPLOYEES OR AGENTS BE LIABLE HEREUNDER, WHETHER IN TORT, CONTRACT, OR OTHERWISE, FOR ANY SPECIAL, INDIRECT, PUNITIVE EXEMPLARY, OR DAMAGES, INCLUDING LOST PROFITS. CUSTOMER'S LIABILITY (AND THE LIABILITY OF BIG RIVERS) HEREUNDER SHALL BE**

LIMITED TO DIRECT, ACTUAL DAMAGES. THE EXCLUSION OF ALL OTHER DAMAGES SPECIFIED IN THIS SECTION IS WITHOUT REGARD TO THE CAUSE OR CAUSES RELATING THERETO. THIS PROVISION SHALL SURVIVE THE TERMINATION OF THIS AGREEMENT.

6.04 Survival. Any obligations of a Party that have accrued under this Agreement on or before the date this Agreement is terminated or otherwise expires shall survive that termination or expiration.

ARTICLE VII
INDEMNIFICATION

7.01 Each Party shall indemnify and hold the other Party and Big Rivers harmless from and against any and all claims, demands, damages, judgments, losses or expenses, including attorney fees, asserted against the other Party and/or Big Rivers arising out of, related to or concerning damage to Big Rivers' generation or transmission facilities or the transmission facilities of any other entity resulting from the indemnifying Party's operations, activities, or usage of electric power and energy hereunder, unless said claim, demand, damage, judgments, losses or expenses arise out of the sole negligence or intentional misconduct of the indemnified Party or Big Rivers. Additionally, each Party assumes all responsibility for the electric service at and from the Party's side of the Delivery Point of electricity and for the wires and equipment used in connection therewith, and will indemnify and hold the other Party and Big Rivers harmless from any and all claims for injury or damage to persons or property occurring at and from the indemnifying Party's side of the Delivery Point of electricity, occasioned by such electricity or said wires and equipment, except where said injury or damage is occasioned solely by the negligence or intentional misconduct of the indemnified Party or Big Rivers. The obligations of the Parties under this Article shall survive the termination of this agreement.

ARTICLE VIII
NOTICE

8.01 Except as herein otherwise expressly provided, any notice, demand or request provided for in this Agreement, or served, given or made in connection with it, shall be in writing and shall be deemed properly served, given or made if delivered in person or by any qualified and recognized delivery service, or sent postage prepaid by United States certified mail, return receipt requested, to the persons specified below unless otherwise provided for in this Agreement.

TO CUSTOMER:

Blockware Mining, LLC
141 West Jackson Blvd.
Suite 104
Chicago, Illinois 60604

Attn: Michael Stoltzner
[redacted]

TO SELLER:

President and CEO
Jackson Purchase Energy Corporation
2900 Irvin Cobb Drive
Paducah, Kentucky 42003
Telephone: (270) 422-7321

Any notice from Customer to Seller shall be given concurrently to Big Rivers, using the same methods of delivery required by this Agreement for notice to Seller, at the following address:

President and CEO
Big Rivers Electric Corporation
201 Third Street
Henderson, Kentucky 42420
Telephone: (270) 827-2561

Each Party shall have the right to change the name of the person or location to whom or where notice shall be given or served by notifying the other Party of such change in accordance with this section.

ARTICLE IX
REPRESENTATIONS AND WARRANTIES

9.01 Representations of Seller. Seller hereby represents and warrants to Customer as follows:

(a) Seller is an electric cooperative corporation duly organized, validly existing and in good standing under the laws of the Commonwealth of Kentucky, and has the power and authority to execute and deliver this Agreement, to perform its obligations hereunder, and to carry on its business as such business is now being conducted and as is contemplated hereunder to be conducted during the term hereof.

(b) The execution, delivery, and performance of this Agreement by Seller have been duly and effectively authorized by all requisite corporate action.

9.02 Representations and Warranties of Customer. Customer hereby represents and warrants to Seller as follows:

(a) Customer is a limited liability company duly orga
good standing under the laws of the State of Illino
in the Commonwealth of Kentucky, and has the p

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and deliver this Agreement, to perform its obligations hereunder, and to carry on its business as such business is now being conducted and as is contemplated hereunder to be conducted during the term hereof.

(b) The execution, delivery, and performance of this Agreement by Customer have been duly and effectively authorized by all requisite corporate action.

(c) The rates offered to Customer and incorporated into this Agreement were a necessary factor in the decision of Customer to locate its operations in Kentucky. Customer estimates that its Facility will involve a capital investment of approximately $25 million, and employment of approximately 10 full-time persons.

ARTICLE X
ASSIGNMENT AND SUCCESSION

10.01 Neither Party shall assign its rights hereunder without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed. Notwithstanding the foregoing, either Party may withhold approval of a proposed assignment until it has been provided with all information it may reasonably require regarding the proposed assignee, and it has determined that the proposed assignee has the ability to fulfill assignor's obligations hereunder to the reasonable satisfaction of the Party following the proposed assignment. No assignment by a Party shall relieve the assignor of its obligations hereunder without the written consent of the other Party to accept the assignee as a substitute obligor. This Agreement shall be binding upon and inure to the benefit of the successors, legal representatives, and permitted assigns of the respective Parties hereto.

ARTICLE XI
TERM AND SERVICE COMMENCEMENT DATE

11.01 This Agreement shall become effective upon the Effective Date, and shall remain in effect for twenty years (20) years following the Initial Period.

ARTICLE XII
SUCCESSION, APPROVAL, AND EFFECTIVE DATE

12.01 The "Effective Date" of this Agreement shall be the date hereof, except that said Effective Date shall be postponed and this Agreement shall not become effective unless and until:

(a) all necessary approvals, including approvals of this Agreement, and a corresponding amendment to the Wholesale Power Agreement, are received from (i) the boards of directors of Seller, Customer, and Big Rivers; (ii) the Commission; and (iii) the Rural Utilities Service ("RUS"); or the Parties and Big Rivers waive such approvals;

(b) Seller has completed or caused to be comp[illegible] improvements, and has secured or caused to be [illegible]

KENTUCKY
PUBLIC SERVICE COMMISSION
Linda C. Bridwell
Executive Director

EFFECTIVE
10/14/2021
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required for service to Customer hereunder up to the Maximum Contract Demand for the Initial Period; and

(c) Customer has obtained the necessary permits, including an occupancy permit, for operation of the Facility.

ARTICLE XIII
MISCELLANEOUS

13.01 Entire Agreement. The terms, covenants, and conditions contained in this Agreement, including the attached exhibits, constitute the entire agreement between the Parties and shall supersede all previous communications, representations, or agreements, either oral or written between the Parties hereto with respect to the subject matter hereof; provided, however, that service to Customer is subject to the articles, bylaws, tariffs, rules, and regulations of Seller and to the laws, rules, regulations, and lawful orders of the Commission. In the event of a conflict between this Agreement and the articles, bylaws, tariffs, rules, and regulations of Seller, this Agreement shall take precedence.

13.02 Governing Law, Jurisdiction, and Venue. All respective rights and obligations of the Parties shall be governed by the laws of the Commonwealth of Kentucky without regard to its conflicts of law rules. The courts of the Commonwealth of Kentucky will have exclusive jurisdiction over each and every judicial action brought under or in relationship to this Agreement; provided that the subject matter of such dispute is not a matter reserved by law to the Commission (in which event exclusive jurisdiction and venue will lie with the Commission), or to the U.S. federal judicial system (in which event exclusive jurisdiction and venue will lie with the U.S. District Court for the Western District of Kentucky), and the Parties shall submit to the jurisdiction of Kentucky courts for such purpose.

13.03 Waiver. The waiver by either Party of any breach of any term, covenant, or condition contained herein will not be deemed a waiver of any other term, covenant, or condition, nor will it be deemed a waiver of any subsequent breach of the same or any other term, covenant, or condition contained herein.

13.04 Amendments. This Agreement may be amended, revised, or modified by, and only by, a written instrument duly executed by both Parties and consented to by Big Rivers.

13.05 Counterparts and Electronic Signatures and Delivery. This Agreement may be executed in any number of counterparts, which together will constitute but one and the same instrument, and each counterpart will have the same force and effect as if they were one original. The counterparts of this Agreement may be executed and delivered by facsimile or other electronic signature (including portable document format) by either of the parties and the receiving party may rely on the receipt of such document so executed and delivered electronically or by facsimile as if the original had been received.

13.06 Headings. The headings contained in this Agreer and do not constitute a part of the agreement between the Parties, used to aid in any manner in the construction of this Agreement.

13.07 Severability. Should any provision or provisions of this Agreement be declared void or illegal by any court of competent jurisdiction, then such void or illegal provision or provisions shall be severed from this Agreement, and all other provisions hereof shall remain in full force and effect.

[SIGNATURE PAGE(S) FOLLOW]

IN WITNESS WHEREOF, the Parties hereto have executed this Agreement all as of the day and year first above written.

JACKSON PURCHASE ENERGY CORPORATION

By: _____
Greg Grissom
President and CEO

BLOCKWARE MINING, LLC

By: _____
Michael Stoltzer
President and CEO

EXHIBIT A

FACILITIES TO BE SUPPLIED BY SELLER

For service to Customer up to the Maximum Contract Demand for the Initial Period, Seller anticipates installing, or causing to be installed, the following facilities:

[redacted]

Customer further understands that Seller will require notice of at least twelve months to install, or cause to be installed, the facilities required for the additional capacity.

EXHIBIT B

TERMINATION CHARGES

A. TERMINATION CHARGE

The Termination Charge shall be equal to Big Rivers' actual cost of the transmission and other facilities ("Transmission Facilities Costs") constructed to provide service to Customer, reduced by $900/MW-month of demand. The Transmission Facilities Costs are estimated to initially be $1,800,000 as of February 12, 2021 for service to Customer up to the Maximum Contract Demand for the Initial Period. Big Rivers will subsequently incur additional Transmission Facilities Costs in order for Seller to be able to provide service to Customer at demands above the Maximum Contract Demand for the Initial Period. Those additional Transmission Facilities Costs are [redacted] as of [February 12, 2021. Based on load information provided by Customer, the annual increase/reduction in the Termination Charge is estimated to be:

Year	MW-Months	Increase/(Reduction) of Termination Charge
1	[redacted]	[redacted]
2	[redacted]	[redacted]
2	[redacted]	[redacted]
3	[redacted]	[redacted]
4	[redacted]	[redacted]
5	[redacted]	[redacted]
6	[redacted]	[redacted]
7	[redacted]	[redacted]
8	[redacted]	[redacted]
9	[redacted]	[redacted]
10	[redacted]	[redacted]

If this Agreement expires or is terminated for any reason prior to the completion of the transmission projects required to serve Customer, the Transmission Facilities Costs shall include all costs that Big Rivers has incurred or that are unavoidable as of the date of expiration or termination of this Agreement.

B. EDR TERMINATION CHARGE

The EDR Termination Charge shall equal the sum of all Economic Development Rate Credits Customer is required to refund pursuant to Paragraph C(4) of Exhibit C to this Agreement.

EXHIBIT C

RATES

During the Term of this Agreement, Customer shall take service from Seller under any applicable tariffs of Seller, and Seller shall take service from Big Rivers under Big Rivers' LICX tariff for service to Customer, as such tariffs may be amended from time to time, and any other applicable or successor tariffs; provided, however, that the following Special Contract Rates shall apply to service to Customer in lieu of any other rates in such tariffs unless provided otherwise:

A. Initial Period. The "Peak Demand" for the Initial Period shall equal the applicable Initial Period Peak, as defined below. The rates applicable during the Initial Period are as follows:

1. From the Effective Date of the Agreement through May 31, 2021, Customer shall pay Seller:

   a. A monthly Demand Charge equal to the full then-applicable demand charge under Big Rivers' Large Industrial Customer ("LIC") tariff times the applicable Initial Period Peak; plus

   b. For any Billing Demand each month in excess of the applicable Initial Period Peak and up to the Maximum Contract Demand, a monthly Demand Charge equal to the Big Rivers Adder (as defined in Paragraph E below); plus

   c. an Energy Charge calculated in accordance with Paragraph D of this Exhibit C; plus

   d. the Distribution Adder (as defined in Paragraph E below) for all MWh delivered; plus

   e. all applicable taxes and fees.

2. From June 1, 2021, through the end of the Initial Period, Customer shall pay Seller:

   a. A monthly Demand Charge equal to the full then-applicable demand charge under Big Rivers' LIC tariff times the applicable Initial Period Peak; plus

   b. For any monthly Billing Demand in excess of the Initial Period Peak and up to the Maximum Contract Demand, a monthly Demand Charge equal to the sum of (i) the Big Rivers Adder, and (ii) the Zone 6 Zonal Resource Cr[illegible] Price ("ACP") multiplied by one p[illegible] Margin and again by one plus the

percentage in the Planning Resource Auction ("PRA") for the 2021 Planning Year; plus

c. an Energy Charge calculated in accordance with Paragraph D of this Exhibit C; plus

d. the Distribution Adder for all MWh delivered; plus

e. all applicable taxes and fees.

3. If Customer's monthly peak during the Initial Period exceeds the Maximum Contract Demand, the LIC tariff rate will be applied to all load above the Maximum Contract Demand.

4. The "Initial Period Peak" during the Initial Period will be [redacted] from the Effective Date through May 31, 2022. The minimum Billing Demand during the Initial Period shall equal the applicable Initial Period Peak.

B. From the end of the Initial Period, and through the end of the Term, Customer shall pay Seller:

1. A monthly Demand Charge calculated as follows:

a. "Planning Year" means the applicable MISO planning year that begins June 1 and ends the following May 31. The 2021 Planning Year begins June 1, 2021, and ends May 31, 2022.

b. By October 1 of each calendar year beginning in 2021 and through the end of the Term, Customer shall provide Big Rivers a peak load estimate applicable to the MISO Planning Year that begins the following June 1. The peak load estimate Customer so provides for a Planning Year shall be the "Peak Demand" for that Planning Year.

c. For each Planning Year following the Initial Period, [redacted] of the Peak Demand for that Planning Year will be served under Big Rivers' LIC tariff, and will pay the full then-applicable demand charge under the LIC tariff.

d. For each Planning Year following the Initial Period, the remaining [redacted] of the Peak Demand for that Planning Year will pay a demand charge calculated as the sum of (i) the Big Rivers Adder, and (ii) the Zone 6 ZRC ACP in the PRA for that Planning Year. This demand charge will be applied to [redacted] of the Planning Year Peak Demand multiplied by one plus the Planning Resource Margin
Planning Resource Losses percenta

calculated in this manner will be fixed for each month of a Planning Year.

e. If Customer's monthly peak during any Planning Year exceeds the Peak Load provided by Customer for that Planning Year, the LIC tariff rate will be applied to all load above the Peak Load provided.

f. Customer's minimum monthly demand will be equal to the Peak Demand.

2. less an Economic Development Rate Credit (if applicable) calculated pursuant to Paragraph C of this Exhibit C; plus

3. an Energy Charge calculated in accordance with Paragraph D of this Exhibit C; plus

4. the Distribution Adder for all MWh delivered; plus

5. all applicable taxes and fees.

C. The "Economic Development Rate Credit" for a month shall be calculated as follows:

1. Customer will receive an Economic Development Rate Credit each month equal to 90% of the demand charge applicable to the Incremental Load that is added during Planning Years 2022 through 2030 and that is served under the LIC rate, less one MW; provided, however, that the duration of the credit applicable to the Incremental Load added during a Planning Year will expire on the following schedule:

a. The Economic Development Rate Credit applicable to Incremental Load added during the 2022 Planning Year shall expire five years after the beginning of the 2022 Planning Year.

b. The Economic Development Rate Credit applicable to Incremental Load added during the 2023 Planning Year shall expire four years after the beginning of the 2023 Planning Year.

c. The Economic Development Rate Credit applicable to Incremental Load added during the 2024 Planning Year shall expire four years after the beginning of the 2024 Planning Year.

d. The Economic Development Rate Credit applicable to Incremental Load added during the 2025 Planning Year shall expire four years after the beginning of the 2025 Planning Year.

e. The Economic Development Rate Credit applicable to Incremental Load added during the 2026 Planning Year shall expire three years after the beginning of the 2026 Planning Year.

f. The Economic Development Rate Credit applicable to Incremental Load added during the 2027 Planning Year shall expire two years after the beginning of the 2027 Planning Year.

g. The Economic Development Rate Credit applicable to Incremental Load added during the 2028 Planning Year shall expire two years after the beginning of the 2028 Planning Year.

h. The Economic Development Rate Credit applicable to Incremental Load added during the 2029 Planning Year shall expire one year after the beginning of the 2029 Planning Year.

i. The Economic Development Rate Credit applicable to Incremental Load added during the 2030 Planning Year shall expire one year after the beginning of the 2030 Planning Year.

2. In accordance with the above schedule, no Economic Development Rate Credit will be paid from the beginning of the 2031 Planning Year through the end of the Term.

3. "Incremental Load" is defined as the amount by which the Peak Load estimate for a Planning Year exceeds the prior Planning Year's Peak Load estimate.

4. For any Incremental Load that is entitled to the Economic Development Rate Credit, Customer's Peak Load following the expiration of the credit for such Incremental Load must be equal to or greater than the Peak Load for the Planning Year in which such Incremental Load was added, for the same number of years that the Incremental Load earned the Economic Development Rate Credit. For example, assuming Customer earns the Economic Development Rate Credit for five years for Incremental Load added during the 2022 Planning Year, Customer's Peak Load for the next five years must then be equal to or greater than the Peak Load for the 2022 Planning Year. If Customer's Peak Load falls below this required minimum in any year, then for each such year in which the minimum is not satisfied, Customer shall refund one year's worth of the Economic Development Rate Credit that was earned for that Incremental Load.

D. The "Energy Charge" shall be calculated as follows:

a. On each business day after the Effective Date and throughout the Term, Big Rivers will provid
estimates of the hourly Day-Ahe

Marginal Prices ("LMP's") for each day of the following seven-day period.

b. Customer shall provide an hourly estimate of its load requirements for each Operating Day ("OD") by 6:00 AM Eastern Time on the prior day (OD-1). OD estimates for Sundays, Mondays, and the OD following holidays must be provided by 6:00 AM Eastern Time on the prior business day, but may be revised by 6:00 AM Eastern Time on each OD-1. These hourly load estimates will be incorporated into the Big Rivers MISO Demand Bid for that OD.

c. Load served under the LIC tariff will pay the full LIC energy rate, including all adders and riders (including but not limited to Big Rivers' and Seller's Fuel Adjustment Clause ("FAC"), Non-FAC Purchase Power Adjustment ("Non-FAC PPA"), and Environmental Surcharge ("ES") tariffs), except that LIC load receiving the Economic Development Rate Credit will not be eligible to receive credits under Big Rivers' or Seller's Member Rate Stability Mechanism ("MRSM") tariffs.

d. Customer will be responsible for the MISO DA energy cost of the load not served under the LIC tariff. Customer will also be responsible for any energy costs and will receive any energy benefits associated with variances between the DA load estimate and actual Real-Time load. Customer will also be responsible for any MISO market charges associated with the load not served under the LIC tariff. No other tariff adders, riders, or credits (such as the FAC, Non-FAC PPA, ES, and MRSM) shall apply to the energy not served under the LIC tariff.

e. If the energy scheduled for a given hour is less than the Initial Period Peak or the Peak Load estimate for a Planning Year, it will be assumed that LIC energy will be "first through the meter." The difference between the energy scheduled for the hour and the LIC energy will pay the energy charge under Paragraph D(d) of this Exhibit C. If energy consumed in a given hour exceeds the Maximum Contract Demand, Customer will be charged the LIC rate for all energy above the Maximum Contract Demand.

f. A material assumption of this Agreement is that Big Rivers, under the Wholesale Power Agreement, may access throughout the Term of the Agre provide the power to which MIS costs apply. If for any reason B

MISO is terminated or the services to provide such power to Customer are altered or are no longer available, the Parties will negotiate in good faith to amend this Agreement to provide substitute pricing.

E. The Big Rivers and Distribution Adders. The "Big Rivers Adder" [redacted] after the Effective Date, and then [redacted] The "Distribution Adder" shall [redacted] after the Effective Date, and [redacted].

EXHIBIT D

BIG RIVERS' CURRENT LARGE INDUSTRIAL CUSTOMER EXPANSION RATE TARIFF

STANDARD RATE – LICX – Large Industrial Customer Expansion **[N]**

Applicable:

In all territory served by Big Rivers' transmission system.

Availability:

This schedule is available to any of the Member Cooperatives of Big Rivers for service to certain large industrial or commercial loads as follows:

(1) To purchases made by a Member Cooperative for service to any New Customer initiating service after August 17, 2020, including New Customers with a QF as defined in Rate Schedule QFP, that either initially contracts for fifty (50) MWs or more of capacity or whose aggregate peak load at any time amounts to fifty (50) MWs or greater (including any later increases to such load) in which case the entire load shall be thereafter subject to this rate schedule.

(2) To purchases made by a Member Cooperative for expanded load requirements of Existing Customers, including Existing Customers with a QF as defined in Rate Schedule QFP, where:

(i) the customer was in existence and served under the then-effective Big Rivers Rate Schedule LIC any time during the Base Year *and*,
(ii) the expanded load requirements are increases in peak load which in the aggregate result in a peak demand which is at least fifty (50) MWs greater than the customer's Base Year peak demand.

STANDARD RATE – LICX – Large Industrial Customer Expansion – (*continued*) **[N]**

Availability (*continued*):

(3) To purchases made by a Member Cooperative for the expanded load requirements of Existing Customers, including Existing Customers with a QF as defined in Rate Schedule QFP, where:

(i) the customer's load was in existence and served under the then-effective Big Rivers Rate Schedule RDS;
(ii) the expanded load requirements are increases in peak load which in aggregate result in a peak demand which is at least fifty (50) MWs greater than the customer's Base Year peak demand; *and*
(iii) the customer requires service through a dedicated delivery point.

For all loads meeting the availability criteria above, no other Big Rivers tariff rate will be available. To receive service hereunder, the Member Cooperative must:

(1) Obtain from the customer an executed written contract or amend an existing contract, for electric service hereunder with terms acceptable to Big Rivers.
(2) Enter into a contract with Big Rivers, or amend an existing contract with Big Rivers, to specify the terms and conditions of service between Big Rivers and the Member Cooperative regarding power supply for the customer.

STANDARD RATE – LICX – Large Industrial Customer Expansion – (*continued*) **[N]**

Rates and Charges:

Each month, each Member Cooperative shall be required to pay separately for each of its customers taking service under this tariff, in each case using that individual customer's contract demand (if any) or metered demand, as applicable.

For all delivery points served under this tariff, the Member Cooperative shall negotiate a "Special Contract Rate" with Big Rivers on a case-by-case basis. The Special Contract Rate shall provide a net benefit to the existing load served by the Member Cooperatives, and may consist of *one or more of the following*:

(1) the Standard Rate – LIC – Large Industrial Customer rate,
(2) market-based rates,
(3) fixed rates,
(4) time-of-use rates, *or*
(5) other negotiated rate.

For example, a Special Contract Rate based on market prices could consist of *the sum of the following*:

(1) Expansion Demand and Expansion Energy Rates:
The Expansion Demand rates, Expansion Energy rates, or both shall be established to correspond to the actual costs of power purchased by Big Rivers from Third-Party Suppliers selected by Big Rivers from which Big Rivers procures the supply and delivery of the type and quantity of service required by the Member Cooperative for resale to its customer. Such monthly costs shall include *the sum of all Third-Party Supplier charges*, including –

(i) capacity and energy charges, charges to compensate for transmission losses on Third-Party transmission systems,
(ii) all transmission and ancillary services charges on Third-Party transmission systems paid by Big Rivers to purchase such Expansion Demand and Expansion Energy and have it delivered to Big Rivers' transmission system, *and*
(iii) all MISO expenses and costs.

STANDARD RATE – LICX – Large Industrial Customer Expansion – (*continued*) **[N]**

Rates and Charges (*continued*):

(2) Expansion Demand Transmission Rate:
Big Rivers shall assess unbundled charges for network transmission service on the Big Rivers Transmission System according to the rates in the OATT applied to each kW taken as Expansion Demand.

(3) Ancillary Services Rates for Expansion Demand and Expansion Energy:
Big Rivers shall assess unbundled rates for all ancillary services required to serve load served under this schedule. Big Rivers shall supply the following six ancillary services as defined and set forth in the OATT –

(i) Scheduling System Control and Dispatch;
(ii) Reactive Supply and Voltage Control from Generation Sources Services;
(iii) Regulation and Frequency Response Service;
(iv) Energy Imbalance Service;
(v) Operating Reserve – Spinning Reserve Service; *and*
(vi) Operating Reserve – Supplemental Reserve Service.

(4) Big Rivers Adder:
In addition to the charges contained in Items (1), (2), and (3) of this Rates and Charges section, Big Rivers shall charge an adder determined on a case by case basis.

Metering:

Big Rivers shall provide an appropriate meter to all delivery points of Large Industrial Customer delivery point customers served under this rate schedule.

STANDARD RATE – LICX – Large Industrial Customer Expansion – (*continued*) **[N]**

Definitions:

Please see Section 4 for definitions common to all tariffs.

Definitions specific to this rate schedule are:

(1) "Base Year" shall mean the twelve (12) calendar months from _____ 2018 through _____ 2019.

(2) "Existing Customer" shall mean any customer of a Member Cooperative served as of _____, 2019.

(3) "New Customer" shall mean any customer of a Member Cooperative commencing service on or after _____, 2019.

(4) "Special Contract Rate" shall mean a rate negotiated with a Member Cooperative to serve the load requirements of a New Customer or an Existing Customer.

(5) "Expansion Demand" and "Expansion Energy" *for the load requirements of a New Customer* shall be the Member Cooperative's total demand and energy requirements for the New Customer, including amounts sufficient to compensate for losses on the Big Rivers transmission system as set forth in the OATT.

(6) "Expansion Demand" *for the expanded local requirements of an Existing Customer* shall be the amount in kW by which the customer's Billing Demand *exceeds* the customer's Base Year peak demand, *plus* an additional amount of demand sufficient to compensate for losses on the Big Rivers transmission system as set forth in the OATT. *In those months in which there is Expansion Demand*, "Expansion Energy" shall be the amount in kWh by which the customer's kWh usage for the current month *exceeds* the customer's actual kWh usage for the corresponding month of the Base Year, *plus* an additional amount of kWh sufficient to compensate for losses on the Big Rivers transmission system as set forth in the OATT.

(Name of Utility)

For All Territory Served By
Cooperative's Transmission System
P.S.C. KY. No. 27

Original SHEET NO. 30.06

CANCELLING P.S.C. KY. No. _____

_____ SHEET NO. _____

RATES, TERMS AND CONDITIONS – SECTION 1

[N]

STANDARD RATE – LICX – Large Industrial Customer Expansion
Billing Form

INVOICE
BIG RIVERS ELECTRIC CORP. P. O. BOX 24 HENDERSON, KY 42419-0024
MONTH ENDING mm/dd/yy

TO: LARGE INDUSTRIAL CUSTOMER EXPANSION
DELIVERY POINTS

ACCOUNT
SERVICE FROM mm/dd/yy THRU mm/dd/yy
USAGE:

USAGE	DEMAND	TIME	DAY	METER	MULT	KW DEMAND
		00:00 A (or P)	mm/dd		1000	00,000

POWER FACTOR	BASE	PEAK	AVERAGE	kW DEMAND BILLED
EXPANSION DEMAND	00.00%	00.00%	00.00%	000,000

ENERGY	PREVIOUS	PRESENT	DIFFERENCE	MULT.	KWH USED
EXPANSION ENERGY	00000.000	00000.000	0000.000	1000	00,000,000

EXPANSION DEMAND & EXPANSION ENERGY

EXPANSION DEMAND, INCLUDING LOSSESS	kW	TIMES	$	EQUALS	$
P/F PENALTY	kW	TIMES	$	EQUALS	$
EXPANSION ENERGY, INCLUDING LOSSESS	kWh	TIMES	$	EQUALS	$
OTHER EXPANSION SERVICE CHARGES				EQUALS	$
SUBTOTAL					$

EXPANSION DEMAND TRANSMISSION

LOAD RATIO SHARE OF NETWORK LOAD	$

EXPANSION DEMAND & EXPANSION ENERGY ANCILLIARY SERVICES

SCHEDULING SYSTEM CONTROL & DISPATCH SERVICE	$
REACTIVE SUPPLY & VOLTAGE CONTROL FROM GENERATION SOURCES SERVICE	$
REGULATION & FREQUENCY RESPONSIVE SERVICE	$
ENERGY IMBALANCE SERVICE	$
OPERATING RESERVE – SPINNING RESERVE SERVICE	$
OPERATING RESERVE – SUPPLEMENTAL RESERVE SERVICE	$
SUBTOTAL	$

BIG RIVERS ADDER

EXPANSION DEMAND	kW	TIMES	$	EQUALS	$

TOTAL AMOUNT DUE $

---------- LOAD FACTOR ----------

ACTUAL	BILLED	MILLS PER KWH
00.00%	00.00%	00.00

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24TH OF THE MONTH

DATE OF ISSUE September 3, 2020
DATE EFFECTIVE August 17, 2020

/s/ Robert W. Berry

ISSUED BY: Robert W. Berry,
President and Chief Executive Officer
Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420
Issued by Authority of an Order of the Commission, dated August 17, 2020, in Case No. 2019-00365

KENTUCKY
PUBLIC SERVICE COMMISSION
Kent A. Chandler
Acting Executive Director

EFFECTIVE
8/17/2020
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

EXHIBIT E

BIG RIVERS' CURRENT LARGE INDUSTRIAL CUSTOMER TARIFF

RATES, TERMS AND CONDITIONS – SECTION 1

STANDARD RATE – LIC – Large Industrial Customer

Applicable:

In all territory served by Big Rivers' transmission system.

Availability:

This schedule is available to any of Big Rivers' then existing Member Cooperatives for service to Large Industrial Customers served using dedicated delivery points. Retail service by a Member Cooperative to a Large Industrial Customer served using a dedicated delivery point shall be provided pursuant to the terms of a written retail service agreement which shall be subject to Big Rivers' approval.

Term:

This rate schedule shall take effect at 12:01 AM CPT on the effective date of this tariff.

Rates:

Rates Separate for Each Large Industrial Customer:

Each month each Member Cooperative shall be required to pay separately for each of its qualifying Large Industrial Customers taking service under this tariff, in each case using that individual Large Industrial Customer contract demand (if any) or metered demand, as applicable.

STANDARD RATE – LIC – Large Industrial Customer – (*continued*)

For all Large Industrial Customer delivery points, a Monthly Delivery Point Rate consisting of:

A Demand Charge of:
All kW of billing demand at $10.7150 per kW. **[R]**

Plus,

An Energy Charge of:
All kWh per month at $0.038050 per kWh. **[I]**

No separate transmission or ancillary services charges shall apply to these rates.

Charges:

Each month, each Member Cooperative shall pay on behalf of each of its large industrial customers taking service under this rate schedule a demand charge calculated by multiplying the demand charge by the higher of the maximum integrated metered thirty-minute non-coincident peak demand or the established contact demand, if any, plus an energy charge calculated by multiplying the energy charge by the metered consumption of kWh in that month.

The Following adjustment clauses and riders shall apply to service under this tariff.

Voluntary Price Curtailable Service Rider
Renewable Resource Energy Service
Rebate Adjustment
Environmental Surcharge
Fuel Adjustment Clause
Member Rate Stability Mechanism
Unwind Surcredit
Non-Smelter Non-FAC PPA
Rural Economic Reserve Rider **[T]**

RATES, TERMS AND CONDITIONS – SECTION 1

STANDARD RATE – LIC – Large Industrial Customer – (*continued*)

Billing:

Big Rivers shall bill Member no later than the first working day after the 13th of the month for the previous month's service hereunder for Large Industrial Customers. Member shall pay Big Rivers in immediately available funds on the first working day after the 24th of the month. If Member shall fail to pay any such bill within such prescribed period, Big Rivers may discontinue delivery of electric power and energy hereunder upon five (5) days written notice to Member of its intention to do so. Such discontinuance for non-payment shall not in any way affect the obligation of Member to pay the take-or-pay obligation of a particular Large Industrial Customer.

RATES, TERMS AND CONDITIONS – SECTION 1

STANDARD RATE – LIC – Large Industrial Customer – (*continued*) [T]

Bill Format [T]

Please see Section 4 – Definitions for certain terms used on this Bill Format. [T]

BIG RIVERS ELECTRIC CORPORATION — INVOICE — P. O. BOX 24 — HENDERSON, KY 42419-0024
MONTH ENDING mm/dd/yy

TO: Member's Name ACCOUNT
SUBSTATION SERVICE FROM: mm/dd/yy THRU mm/dd/yy
SERVICE FROM: mm/dd/yy THRU mm/dd/yy BILLED PEAK mm/dd time

USAGE	DEMAND	TIME 00:00 A (or P)	DAY mm/dd	METER	MULT. 1,000	KW DEMAND 00,000
POWER FACTOR		BASE	PEAK	AVERAGE	BILLED	
		00.00%	00.00%	00.00%	PEAK	
		PREVIOUS	PRESENT	DIFFERENCE	MULT.	KWH / USED
ENERGY		00000.000	00000.000	00000.000	1,000	00,000,000
ACTUAL DEMAND		0,000	KW times	$00.000000	EQUALS	$ 00,000.00
ADJUSTMENTS / REFUNDS		0,000	KW times	$00.000000	EQUALS	00,000.00
					SUBTOTAL	$ 00,000.00
ENERGY		0,000,000	KWh times	$0.000000	EQUALS	$ 00,000.00
ADJUSTMENTS / REFUNDS		0,000,000	KWh times	$0.000000	EQUALS	00,000.00
					SUBTOTAL	$ 00,000.00
					DEMAND AND ENERGY	$ 00,000.00
FUEL ADJUSTMENT CLAUSE		0,000,000	KWh times	$0.000000	EQUALS	$ 00,000.00
NON-SMELTER NON-FAC PPA		0,000,000	KWh times	$0.000000	EQUALS	00,000.00
					SUBTOTAL	$ 00,000.00
ENVIRONMENTAL SURCHARGE		$00,000.00	Times	0.00%	EQUALS	$ 00,000.00
POWER FACTOR PENALTY		0,000	KW times	$00.000000	EQUALS	00,000.00
UNWIND SURCREDIT		0,000,000	KWh times	$0.000000	EQUALS	00,000.00

[T]

STANDARD RATE – LIC – Large Industrial Customer – (*continued*)

Bill Format (*continued*)

Please see Section 4 – Definitions for certain terms used on this Bill Format.

MRSM ADJUSTMENT						00,000.00
CURTAILABLE SERVICE RIDER						00,000.00
RENEWABLE RESOURCE ENERGY	0,000,000	KWh times	$0.000000	EQUALS		00,000.00
REBATE ADJUSTMENT						00,000.00
ADJUSTMENT	0,000,000	KWh times	$0.000000	EQUALS		00,000.00
				SUBTOTAL	$	00,000.00
				TOTAL AMOUNT DUE	$	00,000.00

[D]

- - - - - - - - LOAD FACTOR - - - - - - -		- - - - - - - - - - POWER FACTOR - - - - - - - - - -			
ACTUAL.	BILLED	BASE	AVERAGE	@ PEAK	MILLS PER KWH
00.00%	00.00%	00.00%	00.00%	00.00%	00.00

DUE IN IMMEDIATELY AVAILABLE FUNDS ON OR BEFORE THE FIRST WORKING DAY AFTER THE 24TH OF THE MONTH

DATE OF ISSUE July 15, 2020
DATE EFFECTIVE June 25, 2020

/s/ Robert W. Berry

ISSUED BY: Robert W. Berry,
President and Chief Executive Officer
Big Rivers Electric Corporation, 201 Third Street, Henderson, KY 42420
Issued by Authority of an Order of the Commission, dated June 25, 2020, in Case No. 2020-00064

KENTUCKY
PUBLIC SERVICE COMMISSION
Kent A. Chandler
Acting Executive Director

EFFECTIVE
6/25/2020
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

Amendment to Blockware Contract

FIRST AMENDMENT TO AGREEMENT FOR ELECTRIC SERVICE

THIS FIRST AMENDMENT TO AGREEMENT FOR ELECTRIC SERVICE ("Amendment") is made and entered into as of the 16th day of August, 2023, between **JACKSON PURCHASE ENERGY CORPORATION**, a Kentucky rural electric cooperative corporation, with its principal office located at 6525 US Highway 60W, Paducah, KY 42001 ("Seller"), and **BLOCK MINING, INC.**, a Delaware corporation, successor in interest to Blockware Mining, LLC, with its principal office located at 141 W. Jackson Boulevard, Suite 1404, Chicago, IL 60604 and with a service address at 5657 Commerce Drive, Paducah, Kentucky 42001 ("Customer"). Seller and Customer are individually referred to herein as a "Party" and collectively as the "Parties."

WHEREAS, Seller and Customer are parties to an Agreement for Electric Service dated April 12, 2021 (the "Retail Agreement"), under which Seller provides retail electric service to Customer under the terms of that Retail Agreement;

WHEREAS, Seller purchases the electric power and energy for resale to Customer from Big Rivers Electric Corporation ("Big Rivers") under a wholesale power contract dated October 14, 1977, as has been and may be amended from time to time; and

WHEREAS, the Parties desire to amend the Retail Agreement as set forth herein;

NOW, THEREFORE, in consideration of the mutual covenants contained herein, the Parties agree as follows:

1. Section 3.03 of the Retail Agreement is deleted and replaced in its entirety with the following:

> 3.03 Billing. Bills for service hereunder shall be paid electronically or at the office of the Seller as follows:
>
> Jackson Purchase Energy Corporation
> P. O. Box 3000
> Hopkinsville, KY 42241-3000
>
> Such payments shall be due on the "Due Date," which shall be: (i) the 15th day of each month for service furnished during the preceding monthly billing period, or (ii) the next Business Day following the 15th if the 15th day is on a day other than a Business Day, provided Big Rivers has sent the monthly invoice to Customer. "Business Day" means any day other than a Saturday, Sunday, or legal holiday on which state-chartered commercial banking institutions in Kentucky are authorized by law to be closed. If payment in full is not received by Seller on or before the Due Date, or if Customer fails to maintain adequate credit support or payment security as required hereunder, Seller may discontinue service to the Customer without further action on the part of Seller by giving the Customer written notice at least ten (10) calendar days in advance of its int
> however, that such discontinuance of service shall
> of its obligations under this Agreement or limit Seller's other remedies under this

Agreement. Simple interest equal to the then-effective prime commercial lending rate as published in the "Money Rates" section of *The Wall Street Journal* plus one percent (1%) shall apply to any unpaid amounts from the Due Date until paid.

In the event any portion of the bill is in bona fide dispute, as a result of metering-related issues or otherwise, Customer shall notify Seller on or before the Due Date of the disputed amount and the reason therefor and shall pay the undisputed amount. The parties shall attempt in good faith to resolve the dispute. If the Parties are unable to agree upon a correct amount within ten (10) calendar days of Customer's written notice of the dispute, then the disputed amount shall become due on the later of the Due Date or the end of that ten (10) calendar day period.

2. Section 3.04 of the Retail Agreement is deleted and replaced in its entirety with the following:

3.04 Credit Support for Monthly Billing Obligations

(a) Customer shall provide and maintain with Big Rivers credit support in the form of a cash deposit or an irrevocable bank standby letter of credit in a form acceptable to Big Rivers representing [redacted] of actual billing as calculated under Section 3.04(c) as security for the payment of Customer's monthly billing obligations. The amount of the credit support shall be agreed to by Customer and Big Rivers as a condition of this Amendment being executed by the parties, and, upon such execution, and notwithstanding Section 5 of this Amendment, Big Rivers shall immediately transfer to Customer the credit support now held by Seller in excess of the recalculated credit support. Big Rivers will hold the credit support on Seller's behalf. In the event Seller does not receive Customer's payment of any monthly billing invoice on or before the Due Date, after notifying Customer of its intent to do so, Seller and/or Big Rivers may, in addition to and without limiting any other remedies available to either of them, call on the credit support provided in this Section 3.04 or any other security deposit, payment security, or credit support under this Agreement or under any other agreement between Customer and Seller to satisfy any unpaid invoices. The level of credit support required by this section will be recalculated by Big Rivers at the start of each Planning Year and six months thereafter; provided that Big Rivers shall have the option to additionally recalculate the level of credit support at the start of any calendar quarter. In the event any such recalculation differs by more than $25,000 from the level of credit support previously required at the time of the recalculation, then the required level of credit support under this Section 3.04 shall be reset based on the new calculation. Customer shall provide the level of credit support required by Big Rivers within fifteen (15) calendar
Big Rivers shall refund any excess cash de
recalculation within fifteen (15) days after

(b) In the event Seller does not receive Customer's payment of any monthly billing invoice on or before the Due Date, then, in addition to all other remedies, Customer's obligation to provide payment security for its monthly billing obligations under Section 3.04(a) [redacted] For avoidance of doubt, Customer's payment must arrive in Seller's bank account on or before the Due Date to avoid application of this Section 3.04(b).

(c) In re-calculating the credit support based on actual billing amounts pursuant to this Section 3.04, Big Rivers will determine actual bills based upon an average of Customer's monthly bills for the twelve months preceding when the re-calculation is performed. For any recalculation where the MISO PRA ACP has changed, Big Rivers will apply that known value into the recalculation. In the event a material change in the Maximum Contract Demand, Peak Demand, or Customer's usage has occurred or is expected to occur due to request or declaration of Customer, Big Rivers will adjust the volume in the historical twelve months of billings by the percentage of increase in the new demand or energy level in an effort to create billing amounts that reflect the anticipated volume in the future. Big Rivers may make adjustments to the calculation to take into account changes in the available Economic Development Rate Credits, LIC rates, or the FAC, Non-FAC PPA, ES, or MRSM tariff riders.

3. Section 8.01 of the Retail Agreement is deleted and replaced in its entirety with the following:

8.01 Except as herein otherwise expressly provided, any notice, demand or request provided for in this Agreement, or served, given or made in connection with it, shall be in writing and shall be deemed properly served, given or made if delivered in person or by any qualified and recognized delivery service, or sent postage prepaid by United States certified mail, return receipt requested, to the persons specified below unless otherwise provided for in this Agreement.

TO CUSTOMER:

Block Mining, Inc.
141 West Jackson Blvd.
Suite 1404
Chicago, Illinois 60604
Attn: Michael Stoltzner
[redacted]

KENTUCKY
PUBLIC SERVICE COMMISSION
Linda C. Bridwell
Executive Director
Linda C. Bridwell
EFFECTIVE
9/30/2023
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

TO SELLER:

President and CEO
Jackson Purchase Energy Corporation
6525 US Highway 60 W
Paducah, Kentucky 42001
Telephone: (270) 422-7321

Any notice from Customer to Seller shall be given concurrently to Big Rivers, using the same methods of delivery required by this Agreement for notice to Seller, at the following address:

President and CEO
Big Rivers Electric Corporation
710 West 2nd Street
Owensboro, Kentucky 42301
Telephone: (270) 827-2561

Each Party shall have the right to change the name of the person or location to whom or where notice shall be given or served by notifying the other Party of such change in accordance with this section.

4. Representations and Warranties of Customer. Customer hereby represents and warrants to Seller as follows:

Customer is a corporation duly organized and validly existing and in good standing under the laws of the State of Delaware, is authorized to do business in the Commonwealth of Kentucky, and has the power and authority to execute and deliver this Amendment, to perform its obligations hereunder and under the Retail Agreement, and to carry on its business as such business is now being conducted and as is contemplated under the Retail Agreement to be conducted during the term thereof. Customer agrees that it is successor in interest to Blockware Mining, LLC and that all obligations of Blockware Mining, LLC under the Retail Agreement, as amended herein, are binding upon Customer, no matter when those obligations were or are incurred.

5. Required Approvals. This Amendment shall not become effective unless and until all necessary approvals are received from (i) the boards of directors of Seller and Big Rivers, (ii) the Kentucky Public Service Commission ("Commission"), and (iii) the Rural Utilities Service; or the Parties and Big Rivers waive such approvals.

6. Definitions. Capitalized terms used but not defined in this Amendment shall have the meanings given them in the Retail Agreement.

7. Entire Agreement. The terms, covenants, and conditions contained in this Amendment constitute the entire agreement between the Parties and shall supersede all previous communications, representations, or agreements, either oral or w with respect to the subject matter hereof; provided, however, that to the articles, bylaws, tariffs, rules, and regulations of Seller and to the laws, rules, regulations,

and lawful orders of the Commission. In the event of a conflict between this Amendment and the articles, bylaws, tariffs, rules, and regulations of Seller, this Amendment shall take precedence.

8. Retail Agreement Reaffirmed. All terms of the Retail Agreement not expressly amended by this Amendment are adopted and reaffirmed in their entirety.

9. Consent. By executing this Amendment, Big Rivers consents to the Amendment pursuant to Section 13.04 of the Retail Agreement, and agrees that Seller will not be liable to Big Rivers for any portion of a monthly invoice that Customer fails to pay.

10. Counterparts and Electronic Signatures and Delivery. This Amendment may be executed in any number of counterparts, which together will constitute but one and the same instrument, and each counterpart will have the same force and effect as if they were one original. The counterparts of this Amendment may be executed and delivered by facsimile or other electronic signature (including portable document format) and the Parties may rely on the receipt of such document so executed and delivered electronically or by facsimile as if the original had been received.

11. Headings. The headings contained in this Amendment are solely for convenience and do not constitute a part of the agreement between the Parties, nor should such headings be used to aid in any manner in the construction of this Amendment.

12. Severability. Should any provision or provisions of this Amendment be declared void or illegal by the Commission or any court of competent jurisdiction, then such void or illegal provision or provisions shall be severed from this Amendment, and all other provisions hereof shall remain in full force and effect.

[SIGNATURE PAGE(S) FOLLOW]

IN WITNESS WHEREOF, the Parties hereto have executed this Amendment all as of the day and year first above written.

JACKSON PURCHASE ENERGY CORPORATION

DocuSigned by:
Greg Grissom
3B59CF65513D44F...

By: _____
Greg Grissom
President and CEO

BLOCK MINING, INC.

DocuSigned by:
Michael Stoltzner
5DE5E15194A84CD...

By: _____
Michael Stoltzer
Chairman and President

CONSENT

Big Rivers hereby evidences its consent to this Amendment.

BIG RIVERS ELECTRIC CORPORATION

DocuSigned by:
Robert W Berry
77FD44DFB26E4B7...

Robert W. Berry, President/CEO

KENTUCKY
PUBLIC SERVICE COMMISSION
Linda C. Bridwell
Executive Director
Linda C. Bridwell
EFFECTIVE
9/30/2023
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 31: Refer to the Kendall Testimony at 8. Ms. Kendall states that, "[w]hile Jackson Purchase's headcount actually decreased in 2023 compared to 2019, the cost of labor and benefits increased by approximately $1 million between 2019 and 2023, or about 12%." Explain in full detail why Jackson Purchase Energy's labor and benefits increased by $1 million in four years even though its headcount decreased.

Response 31: Each year since 2019, Jackson Purchase has invested in both its bargaining and non-bargaining employees by giving raises, whether based on performance (for non-bargaining employees) or pre-negotiated contract (bargaining employees). Please refer to responses to Items 3-5 for more specific information about raises during this period. These wage increases also lead to increased employer contributions to employees' retirement and 401(k) savings plans and increased employer tax liabilities. Between 2019 and 2023, annual health insurance premiums per employee have also increased by $1,696, or about 12.5%. Finally, the average number of full-time employees at Jackson Purchase dropped from 70 in 2019 to 67 in 2023. While not a drastic reduction, Jackson Purchase is operating at an extremely lean headcount given its consumer size but is still seeing increases in labor costs.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 32: Refer to the Kendall Testimony at 8 – 9.

a. Explain in detail why Jackson Purchase Energy has not completed a depreciation study since 2006.

b. Ms. Kendall states that, "Jackson Purchase continues to depreciate its automated metering infrastructure and related utility plant assets at reasonable, industry-standard rates." Explain what is meant by reasonable, industry-standard rates.

Response 32a: Given that the types of depreciable fixed assets on Jackson Purchase's balance sheet have not changed drastically since 2006, Jackson Purchase feels that the depreciation rates that it utilizes are appropriate.

Response 32b: Please refer to Case No. 2007-00116, *General Adjustment of Electric Rates of Jackson Purchase Energy Corporation*, Application part 9 of 9, Exhibit P, Depreciation Study, Bates 000719-000748. Jackson Purchase's current depreciation rates were approved by RUS after the last depreciation study was conducted. Also, Jackson Purchase submits each of its asset classes' depreciation rates to be reviewed by the Public Service Commission annually in its Annual Financial Report.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 33: Refer to the Kendall Testimony at 9. Ms. Kendall asserts that Jackson Purchase Energy provides medical, dental, vision, short-term income replacement, and a $20,000 life insurance policy for each employee.

a. Ms. Kendall states that Jackson Purchase Energy pays 92% of the total monthly premium for health insurance for non-bargaining employees versus 82.5% of the total monthly premium for health insurance for negotiating employees.
    i. Explain in detail why Jackson Purchase Energy pays a higher percentage for non-bargaining employees' health insurance premium costs than for the bargaining employees.
b. Explain in detail whether Jackson Purchase Energy provides health savings account contributions to its employees, and if so, provide the monetary amount regarding the same.
c. Provide a copy of all formal studies conducted that compare Jackson Purchase Energy's health insurance premium and health savings account contributions to those of local employers for the geographic area in which the Company operates. If no formal study exists explain why not.
d. Discuss any informal studies that compare Jackson Purchase Energy's health insurance premium and health savings account contributions to those of local employers for the geographic area in which the Company operates. If no informal study exists explain why not.

e. Confirm that according to the most recent data from the Bureau of Labor Statistics, the average share of premiums paid by the employer for single coverage in private industry is 79%.[1]

f. Confirm that according to the most recent data from the Bureau of Labor Statistics, the average share of premiums paid by the employer for family coverage in private industry is 67%.[2]

g. Refer to the Commission's final Order in Case No. 2021-00407, page 9.[3] Did Jackson Purchase Energy make any adjustments to Health Benefits Expense based on health insurance benefit contributions in excess of the Bureau of Labor Statistics' average for single and family coverage? If not, explain why not and update the adjusted test year expense based on the most recent report available. Provide all supporting calculations and documents.

h. Provide the contribution amounts to insurance costs that are paid by Jackson Purchase Energy and the retirees.

i. Provide the contribution amounts to dental insurance costs that are paid by Jackson Purchase Energy and the employees.

j. Provide the contribution amounts to vision insurance costs that are paid by Jackson Purchase Energy and the employees.

k. Provide the contribution amounts to short-term income replacement costs that are paid by Jackson Purchase Energy and the employees.

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[1] https://www.bls.gov/news.release/ebs2.t03.htm, Table 3.
[2] https://www.bls.gov/news.release/ebs2.t04.htm, Table 4.
[3] Case No. 2021-00407, *Electronic Application of South Kentucky Rural Electric Cooperative Corporation for a General Adjustment of Rates, Approval of Depreciation Study, and Other General Relief* (Ky. PSC Jun. 30, 2022), Order at 9.

l. Explain whether the reference to short-term income replacement is the same or different as short-term disability insurance.

Response 33a: Please see response Commission Staff's First Request for Information, Item 32.

Response 33b: Jackson Purchase does not provide employees with a Health Savings Account.

Response 33c: Please see the Excel files provided separately.

Response 33d: No informal studies were conducted.

Response 33e: Confirmed.

Response 33f: Confirmed.

Response 33g: No. Jackson Purchase is not a party to the cited case. For the requested calculation, see the response to Commission Staff's Second Request for Information, Item 11.

Response 33h: Refer the Application, Exhibit 9, Direct Testimony of, Meredith Kendall, page 9. Also see, the response to Commission Staff's First Request for Information, Item 25.

Response 33i-33k: Refer the Application, Exhibit 9, Direct Testimony of, Meredith Kendall, page 9.

Response 33l: The short-term income replacement is part of Jackson Purchase's medical plan. It is a type of short-term disability insurance and used in the same way (to supplement one's income while off work); however, it is paid out based on a tiered system rather than a percentage of the employee's salary. Tiers are listed below:

Weekly benefit:
First 6 weeks: $390
7th through 12th weeks: $520
13th through 26th weeks: $650

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 34: Refer to the Kendall Testimony at 9. Ms. Kendall asserts that Jackson Purchase Energy pays for 100% of the premium for life insurance equal to two times an employee's annual base wages, and $100,000 additional coverage for business travel accident insurance with premiums ranging from $14.65 - $114.53 per month per employee.

a. Reconcile the statement by Ms. Kendall on page 9 of her testimony stating that all Jackson Purchase Energy employees are eligible for a $20,000 life insurance policy, with the above statement that Jackson Purchase Energy provides employees with a life insurance policy equal to two times its annual base wages.
b. Identify how many of Jackson Purchase Energy's employees participate in the long-term disability insurance option, in which Jackson Purchase pays for 2/3 of the premium.

Response 34a: A $20,000 life insurance benefit is included within Jackson Purchase's medical insurance premium. Additionally, Jackson Purchase provides its employees with a life insurance benefit equal to two times the employee's gross base wages.

Response 34b: Currently, 65 out of 67 employees eligible for the long-term disability benefit participate.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 35: Refer to the Kendall Testimony at 10. Ms. Kendall states that for bargaining employees the Company contributes to the NRECA retirement security plan and also contributes a 5% contribution to the IBEW Pension Plan, while non-bargaining employees employed prior to 2006 participate in the NRECA retirement security plan, and receive a 4% contribution to their 401(k) account. Ms. Kendall further asserts that non-bargaining employees hired on or after January 1, 2006 receive a 14% contribution to their 401(k) account, but do not participate in the NRECA retirement security plan.

a. Explain in detail whether the employees who participate in the NRECA retirement security plan are required to contribute any funds to the retirement plan.
b. Explain in detail whether the employees who participate in the IBEW Pension Plan are required to contribute any funds to the retirement plan.
c. Explain in detail whether the employees who participate in the 401(k) program are required to contribute any funds to that program.
d. Provide a copy of all formal studies that Jackson Purchase Energy conducted and/or relied upon concerning its retirement plan contribution rates, including the pension plans and 401(k) program. If no study exists, explain why not.
e. Provide a copy of all formal studies conducted that compare Jackson Purchase Energy's pension plan and 401(k) contribution rates to that of local employers for the geographic area in which the Company operates. If no formal study exists, explain why not.

f. Discuss any informal studies that compare Jackson Purchase Energy's pension plan and 401(k) contribution rates to that of local employers for the geographic area in which the Company operates. If no informal study exists, explain why not.

Response 35a: Employees participating in the NRECA Retirement & Security Plan are not required to make contributions to the plan.

Response 35b: Employees participating in the IBEW Pension Plan are not required to make contributions to the plan.

Response 35c: Employees participating in the 401(k) program are not required to make contributions to the program.

Response 35d: No formal study exists. Jackson Purchase's contribution rates to the retirement and 401k plans have not changed since the previous rate case.

Response 35e: No formal study exists. Jackson Purchase's contribution rates to the pension and 401k plans have not changed since the previous rate case.

Response 35f: No informal study exists. Jackson Purchase's contribution rates to the pension and 401k plans have not changed since the previous rate case.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 36: Refer to the Kendall Testimony at 11. Ms. Kendall asserts that Jackson Purchase Energy's current union contract took effect on November 3, 2019, and remains in effect until November 2, 2024. Ms. Kendall further asserts that Jackson Purchase Energy has not begun the process of renegotiating the upcoming union contract.

a. Provide a copy of the current union contract, including all amendments.

b. Identify when the Company plans to begin negotiations for the new union contract.

c. Provide updates as to negotiations with the new union contract during the pendency of the case. Consider this an ongoing request.

Response 36a: Please see response Commission Staff's First Request for Information, Item 24.

Response 36b: Jackson Purchase anticipates negotiations for the new union contract will begin in the fall. The current contract expires November 2, 2024.

Response 36c: Jackson Purchase will continue to provide updates as they become available.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 37: Refer to the Application generally.

a. Explain whether payment processing fees have risen in the past 10 years.

b. Provide the monetary amount that Jackson Purchase Energy has included in the revenue requirement for payment processing fees, with a breakdown between each payment type.

c. If Jackson Purchase Energy includes credit card fees in the revenue requirement then provide the Commission case number and Order that approved these specific fees to be included in rates.

d. Provide all payment processing fees that Jackson Purchase Energy has paid for in the years 2014 – 2024, and provide a breakdown for each type of payment processing fee.

e. Identify the type of payments Jackson Purchase Energy accepts from a customer without assessing a fee.

f. Identify the type of payments Jackson Purchase Energy accepts only with a fee assessment.

g. Explain in full detail whether Jackson Purchase Energy requires a convenience fee to be added to all credit card transactions in order for other member customers to not subsidize the credit card payments. If not, explain in full detail why not.

h. Provide the type of credit cards that Jackson Purchase accepts as payment (e.g. Visa, MasterCard, American Express, etc.), the fee that the Company pays to process each type of credit card, and the associated fee to the member customer.

i. Provide all other forms of payment that Jackson Purchase Energy accepts from member customers to pay the utility bill, the corresponding fees that the Company pays for each payment type, as well as all fees assessed to the member customers for each payment type.

Response 37a: In general, payment processing fees have increased over the years for Jackson Purchase. Credit card processing fees are charged to Jackson Purchase on a per-transaction basis, and the number of annual credit card transactions have risen 40% between 2018 and 2023. Also, Jackson Purchase began utilizing PenWar, a processing service for payments received via mail, in September 2020. Jackson Purchase is charged a fee for each piece of mail processed. The fee increased from $0.30/transaction in years 2020-2022, to $0.35/transaction in 2023, to $0.50/transaction in 2024 due to increases in labor and software costs. Please see the attached Excel spreadsheet, which details all processing fees and transaction data available. (Items 1-37a, 1-37d, and 1-37h are all addressed in one spreadsheet.)

Response 37b: Jackson Purchase does not pass processing fees on to its members directly.

Response 37c: Jackson Purchase does not pass processing fees on to its members directly.

Response 37d: Please see the attached Excel spreadsheet. (Items 1-37a, 1-37d, and 1-37h are all addressed in one spreadsheet.)

Response 37e: Jackson Purchase accepts payments in the form of check, cash, debit card, credit card, money order, and kiosk payments, all without assessing a fee to the member.

Response 37f: Jackson Purchase does not assess a fee for any form of payment. Members may use a payment method called Vanilla Direct at various convenience stores to pay their bill, and that payment method does charge a fee of $1.50; however, that fee is in no way associated with Jackson Purchase, and Jackson Purchase does not receive any of that fee.

Response 37g: Jackson Purchase does not pass processing fees on to its members directly. Jackson Purchase has inquired with its software provider, NISC, about the possibility of having credit and debit card fees charged directly to the members who incur the cost, but that is not an option provided by NISC at this time. To do so, Jackson Purchase would have to manually bill members who paid their bills using a credit or debit card, which is unfeasible given the number of credit and debit card payments processed.

Response 37h: Jackson Purchase accepts Visa, Mastercard, and Discover cards. The annual total processing fees paid by the Cooperative are listed in the attached spreadsheet. The fees per credit card transaction that Jackson Purchase pays varies based on the type of card used, volume of transactions, etc. (i.e., there is not one set fee associated with credit card transactions). Jackson Purchase does not pass processing fees on to its members directly. (Items 1-37a, 1-37d, and 1-37h are all addressed in one spreadsheet.)

Response 37i: Jackson Purchase accepts checks, cash, money order, and kiosk payments. The annual total processing fees paid by the Cooperative are listed in the attached spreadsheet. Jackson Purchase does not pass processing fees on to its members directly.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 38: Refer to the Direct Testimony of John Wolfram ("Wolfram Testimony") at 13 – 21. Explain whether the class cost of service study was performed in line with recent Commission precedent.[4] If not, explain in detail why not.

Response 38: The class cost-of-service study was performed is in line with recent Commission precedent for traditional rate filings.

[4] *See* Case No. 2021-00066, *Electronic Application of Kenergy Corp. for a General Adjustment of Rates Pursuant to Streamlined Procedure Pilot Program Established in Case No. 2018-00407* (Ky. PSC June 24, 2021), Order at 11 – 12; *See* Case No. 2020–00131, *Electronic Application of Meade County Rural Electric Cooperative Corporation for an Adjustment in Rates* (Ky. PSC Sept. 16, 2020), Order at 12 – 13; *See* Case No. 2020-00264, *Electronic Application of Cumberland Valley Electric, Inc. for a General Adjustment of Rates Pursuant to Streamlined Procedure Pilot Program Established in Case No. 2018-00407* (Ky. PSC Dec. 30, 2020), Order at 10 – 11; *See* Case No. 2020-00338, *Electronic Application of Licking Valley Rural Electric Cooperative Corporation for a General Adjustment of Rates Pursuant to Streamlined Procedure Pilot Program Established in Case No. 2018-00407* (Ky. PSC Apr. 8, 2021), Order at 10 – 12.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 39: Refer to the Application generally. Provide copies of the Board of Director Meeting Minutes for 2022, 2023. and 2024 year-to-date. Consider this an ongoing request during the pendency of this case.

Response 39: These attachments are being filed separately due to size. Jackson Purchase will continue to provide copies of Meeting Minutes throughout the duration of this case.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 40: Refer to the Application generally. Provide the total amount of contributions and donations included for recovery in the test year and the adjusted test year by separate payee, along with a description of and the purpose for each payee. Also identify the customer benefit associated with each cost.

Response 40: Please see the Excel file provided separately. This spreadsheet provides a breakdown of various miscellaneous expenses, both included and excluded from the revenue requirement.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 41: Refer to the Wolfram Testimony, Exhibit JW-2, Schedule 1.14. If the test year is the twelve months ended August 31, 2023, explain why the ending balances for December 31, 2023 are used to calculate depreciation expense.

Response 41: Reference Schedule 1.14 is for Right of Way. The depreciation adjustment in Reference Schedule 1.12, the ending balances for the 12 months ended August 31, 2023 are used to calculate the adjustment to depreciation expense.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 42: Refer to the Wolfram Testimony, Exhibit JW-2, Reference Schedule 1.05.

a. Provide a detailed breakdown of the donations, promotional advertising, and dues.

b. Confirm that even if some of the aforementioned expenses in (a) are being excluded for ratemaking purposes, it does not change the fact that the expenses are still being paid with ratepayer funds.[5]

Response 42(a): Please see response to Item 40 above and the response to Commission Staff's Second Request for Information, Item 5.

Response 42(b): Confirmed.

[5]*See* Case No. 2016-00077, Licking Valley RECC's response to the Attorney General's Second Request for Information, Item 5.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 43: Refer to the Application generally. Provide a list that identifies all miscellaneous costs for the test year, including but not limited to dinners (including all holiday dinners), gifts, donations, membership dues, annual meeting costs, etc. For each cost indicate whether it was removed from or included in the requested revenue requirement.

Response 43: Please see the response and attached spreadsheet for Item 40.

Jackson Purchase Energy Corporation
Case No. 2024-00085
Attorney General's First Request for Information

Request 44: Refer to the Application generally. Identify fully any and all organizations to which Jackson Purchase Energy pays dues and/or membership fees of any type or sort (hereinafter referred to as "Dues Requiring Organizations"), which engage in any one or more of the following activities (hereinafter "covered activities"):

legislative advocacy, regulatory advocacy, and/or public relations;

advertising;

marketing;

legislative policy research; and/or,

regulatory policy research.

a. If so confirmed with regard to any one or more of these organizations, identify that organization and provide the amount of Jackson Purchase Energy dues which that organization applies to covered activities, both in dollar terms and percentages of total dues.

b. Explain whether all or any portion of said dues are excluded from the pending rate case.

Response 44a: The National Rural Electric Cooperatives Association (NRECA) helps cooperatives develop comprehensive benefit packages though their 401(K) Pension Plan, Group Benefits Program, and associated resources. Kentucky Electric Cooperative (KEC) is a statewide organization that provides legislative, communications, and training services for the 24 local,

consumer-owned electric distribution cooperatives. Jackson Purchase is unable to determine the portion of dues, if any, that the above organizations may use for the activities listed above.

Response 44b: All of the dues paid to the above organizations were excluded from the revenue requirement. Please see response to Items 40 and 47(a) for more information.

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Request 45: Refer to the Application generally. Explain whether Jackson Purchase Energy pays any dues or membership fees to law firms or trade groups which maintain an affiliate engaged in any of the covered activities identified in the preceding question.

a. If so, identify fully the law firm or trade group by name, the name of the affiliate engaged in any such activities, and the amounts Jackson Purchase Energy paid to the law firm, trade group, or affiliate thereof for those activities.

b. Explain whether Jackson Purchase Energy is seeking recovery from ratepayers for any such sums identified in subpart (a) of this question.

Response 45a-b: Jackson Purchase does not pay dues or memberships to law firms or trade groups engaged in the covered activities identified in the preceding question.

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Request 46: Refer to the Application generally. If any affiliate of Jackson Purchase Energy pays dues to one or more Dues Requiring Organizations, and a jurisdictional portion of those dues are charged back to Jackson Purchase Energy, explain whether the dues are being recovered in rates, the amounts thereof, and precisely where they can be found in the Application.

Response 46: Jackson Purchase does not own any affiliated entities.

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Request 47: Refer to the Application generally. For all expenses associated in any manner with any Dues Requiring Organization and for which the Company seeks reimbursement from ratepayers:

a. Provide a complete copy of all invoices received from each such Dues Requiring Organization since the conclusion of the Company's last rate case;

b. Provide any and all documents in the Company's possession that depict how each such Dues Requiring Organization spends the dues it collects from the Company, including the percentage that applies to all covered activities.

c. Provide a detailed description of the services and benefits each Dues Requiring Organization provided to the Company since the conclusion of its most recent rate case. Of these services and benefits, identify which ones accrue directly to ratepayers, and explain fully how.

d. Explain whether any Company personnel actively participate on committees and/or perform any other work for any Dues Requiring Organizations or any other industry organization to which the Company belongs. If so:

    i. State specifically which employees participate, how they are compensated for their time (amount and source of compensation), and the purpose and accomplishments of any such association related work; and,

ii. List any and all reimbursements received from industry associations, for work performed for such organizations by the Company's employees.

Response 47a: Please refer to response to Item 40, including the attached spreadsheet. The only item listed under "Membership Dues/Donation" that is included in the revenue requirement were travel costs associated with attending CFC's annual meeting, not actual membership dues. All other membership dues were excluded from the revenue requirement.

Response 47b-d: Please refer to response 47a. Membership dues were excluded from the revenue requirement.

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Request 48: Refer to the Application generally. Provide a list of all open/vacant positions in the test year and adjusted test year including:

a. Job title,

b. Date the job was created,

c. Length of time that the position has been open,

d. Explanation as to why the position is still vacant,

e. Planned hiring dates for each position,

f. Hiring dates for any of these positions that have been filled, and

g. Fully loaded annual salary for unfilled positions.

Response 48a - 48g: Please see the attached Excel spreadsheet. Positions listed as "Open" were open but are no longer vacant. Positions listed as "Open/Vacant" are currently vacant positions. Positions listed as "New" were newly created positions that have been filled. Positions listed as "New/Vacant" are newly created positions that are currently vacant.

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Request 49: Refer to the Application generally. Provide a list of all new positions in the test year and adjusted test year including:

a. Job title,

b. Date the job was created,

c. Length of time that the position has been open,

d. Planned hiring dates for each position,

e. Hiring dates for any of these positions that have been filled, and,

f. Fully loaded annual salary for unfilled positions.

Response 49a - 49g: Please see the response and Excel spreadsheet provided for Item 48.

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Request 50: Refer to the Application generally. Explain whether any expenses associated with vacant positions being filled after the end of the test year have been included in the pending rate increase/requested revenue requirement.[6]

Response 50: The pro forma adjustments were based upon 70 full-time employees. Jackson Purchase currently employs 67 full-time employees, with 3 vacancies. However, considering its size, both in terms of members served and size of the service territory, Jackson Purchase could easily justify a staffing level of several additional employees.

[6] *See* Case No. 2023-00158, *Electronic Application of Farmers Rural Electric Cooperative Corporation for a General Adjustment of Rates Pursuant to Streamlined Procedure Pilot Program Established in Case No. 2018-00407* (Ky. PSC Oct. 3, 2023), Order at 10.

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Request 51: Refer to the Application generally. Provide a description of the Company's merit and cost of living wage rate increase policies, if any.

Response 51: Please refer to the response to Commission Staff's First Request for Information, Items 21 and 29. Jackson Purchase does not have a policy that dictates wage raises based on cost of living. Bargaining employees receive raises based on the pre-negotiated contract.

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Request 52: Refer to the Application generally. Explain whether all non-operating margins income from all sources is included in Jackson Purchase Energy's requested revenue requirement in the pending case.

Response 52: Non-operating margins are included in the revenue requirements calculation provided in the Application, Exhibit 10, Direct Testimony of John Wolfram, Exhibit JW-2. However, the target margins are determined based on a TIER of 2.000, and the TIER calculation is based on utility operating margins, not net margins.

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Request 53: Refer to the Application generally.

a. Provide the budgeted ROW maintenance expense for each of the years 2014 – 2024.

b. Provide the actual ROW maintenance expense for each of the years 2014 – 2024.

c. Provide the budgeted ROW miles trimmed for each of the years 2014 – 2024.

d. Provide the actual ROW miles trimmed for each of the years 2014 – 2024.

Response 53a-d: Please see the Excel file provided separately.

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Request 54: Refer to the Application generally. Provide the amount of Supplemental Executive Retirement Plan ("SERP") that the Company has provided to employees for each of the years 2014 – 2024.

Response 54: Please refer to the spreadsheet provided in response to Items 3, 4, and 5 parts (a)-(f). The amounts listed under "Incentive Compensation" on each tab are deferred compensation benefits received by Executives during these years.

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Request 55: Provide the rate class data included in Table 1 of Mr. Wolfram's direct testimony for the calendar years 2019 – 2023 separately by year.

Response 55: Please see the Excel file provided separately.

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Request 56: Provide copies of all loan agreements Jackson Purchase Energy currently has in effect. These should include all loans made from the RUS, CoBank, and CFC.

Response 56: The attached loan documents include loan documents from Jackson Purchase's 2020-2023 work plan (plus amendment), a Commitment Letter with RUS from the 2024-2027 work plan, and long-term debt and line-of-credit documents from both CoBank and CFC. The loan documents are being filed separately due to size.

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Request 57: Describe the Environmental Surcharge ("ES") and what expenses are allowed to be captured. Further describe how expenses are passed on to members.

Response 57: This rider is a pass-through of the rider applied to the wholesale bill pursuant to the approved wholesale rates for Big Rivers Electric Corporation. See Jackson Purchase Energy's approved tariff, on file with the Commission and publicly available at: https://psc.ky.gov/tariffs/Electric/Jackson%20Purchase%20Electric%20Coop%20Corp/Tariff.pdf.

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Request 58: Describe the Member Rate Stability Mechanism ("MSRM"). Describe how rates are determined and collected that are subject to the MSRM.

Response 58: This rider is a pass-through of the rider applied to the wholesale bill pursuant to the approved wholesale rates for Big Rivers Electric Corporation. See Jackson Purchase Energy's approved tariff, on file with the Commission and publicly available at: https://psc.ky.gov/tariffs/Electric/Jackson%20Purchase%20Electric%20Coop%20Corp/Tariff.pdf.

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Request 59: Describe the Fuel Adjustment Clause ("FAC"). What costs are subject to collection of the FAC? Describe the mechanics of how rates are determined and collected via the FAC.

Response 59: This rider is a pass-through of the rider applied to the wholesale bill pursuant to the approved wholesale rates for Big Rivers Electric Corporation. See Jackson Purchase Energy's approved tariff, on file with the Commission and publicly available at: https://psc.ky.gov/tariffs/Electric/Jackson%20Purchase%20Electric%20Coop%20Corp/Tariff.pdf.

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Request 60: Describe the Non-FAC Purchased Power Adjustment ("Non-FAC PPA"). Describe why these costs are not included in the Fuel Adjustment Clause. Further describe the mechanics of how rates are determined and collected that are subject to the Non-FAC PPA.

Response 60: This rider is a pass-through of the rider applied to the wholesale bill pursuant to the approved wholesale rates for Big Rivers Electric Corporation. See Jackson Purchase Energy's approved tariff, on file with the Commission and publicly available at: https://psc.ky.gov/tariffs/Electric/Jackson%20Purchase%20Electric%20Coop%20Corp/Tariff.pdf.

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Request 61: List the dues and donations that Jackson Purchase Energy proposes to include in the revenue requirement.

Response 61: Please refer to response Items 40 and 47a. Membership dues and donations were excluded from the revenue requirement.

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Request 62: Provide a copy of the Company's policy to provide life insurance coverage for employees. Describe how the $50,000 salary cap was determined.

Response 62: A $20,000 life insurance benefit is included within Jackson Purchase's medical insurance premium. Additionally, Jackson Purchase provides its employees with a life insurance benefit equal to two times the employee's gross base wages. Also, the $50,000 cap was set forth by the Commission in its Streamlined Rate Pilot Program, and the cooperative elected to apply the same limit in this filing.

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Request 63: Provide the filing dates for the last five Jackson Purchase Energy rate cases.

Response 63: The last five rate cases are listed below:

- 2021-00358 – *Electronic Application of Jackson Purchase Energy Corporation for a General Adjustment of Rates and other General Relief*
  - Filed October 15, 2021
- 2019-00053 – *Electronic Application of Jackson Purchase Energy Corporation for a General Adjustment of Rates*
  - Filed March 29, 2019
- 2007-00116 *Adjustment of Rates of Jackson Purchase Energy Corporation*
  - Filed December 5, 2007
- 1996-00514 – *In the Matter of the Notice of Proposed General Rate Adjustment by Jackson Purchase Electric Cooperative Corporation*
  - November 6, 1996
- 1990-00153 – *In the Matter of Jackson Purchase Electric Corporation's Notice of Intent to File an Adjustment of its Rates*
  - Filed July 30, 1990

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Request 64: Provide a breakdown of Jackson Purchase Energy's wage expenses for the last five calendar years breaking out regular time, overtime, and other/vacation payout time. Also, include the average number of employees for those years.

Response 64: Please see Excel file provided separately.

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Request 65: Provide the annual mileage of vegetation management clearance work performed for each of the last five calendar years. Provide the costs for vegetation management for the last five calendar years.

Response 65: Please see response to Items 53(b) and 53(d).

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Request 66: Provide a detailed description of all Directors expenses paid by Jackson Purchase Energy for 2022 and 2023. Include all expenses in which Directors are entitled to be reimbursed.

Response 66: Please see Excel file provided separately. Separate tabs listing each Directors' expenses between 2022-2023 are included.

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Request 67: Does the Cooperative pay for the travel and meal expenses for Directors' spouses when the spouse accompanies the Director? If so, indicate by year, from 2022 through 2023, how much spousal travel expenses have been incurred by the Company.

Response 67: Jackson Purchase does not pay for travel or meal expenses for Directors' spouses when accompanying the Director.

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Request 68: What are the OTIER and TIER required by the Cooperative's debt covenants?

Response 68: Please refer to the response to the Commission Staff's First Request for Information, Item 55.

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Request 69: If the OTIER and TIER required by the Cooperative's debt covenants is lower than the 1.85 OTIER and 2.0 TIER requested in the Cooperative's rate relief request, explain why it is necessary to have rates that provide OTIER and TIER higher than required by debt covenants.

Response 69: The loan covenants establish minimum requirements for the financial metrics of TIER and OTIER. Jackson Purchase considers it prudent to establish rates that permit the achievement of financial metrics above these minimums, and the Commission has supported this view in every distribution cooperative rate case of which Jackson Purchase is aware. As stated in Mr. Wolfram's closing comments within his testimony found in the Application, there are several reasons for enacting rates that provide OTIER and TIER results higher than required by debt covenants, these include; increasing the customer charge to ensure that Jackson Purchase's rates are structured so that its fixed charges are covered with the fixed portion of its rates ensuring the revenue requirement is met even with decreased energy sales, and by designing rates that provide TIER and OTIER greater than required Jackson Purchase may increase its current ROW program as well as to investing in maintenance and improvements in its system to provide safe and reliable service to its members.

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Request 70: Are there any specific costs incurred, other than cost of electricity to serve Blockware?

Response 70: Jackson Purchase does not incur any costs, other than cost of electricity, to serve Blockware. Big Rivers maintains the substation that provides electricity to Blockware.

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Request 71: Is there any written contract or agreement with Big Rivers regarding the $1.975 million deposit paid by Blockware? If so, provide a copy of this agreement.

Response 71: Please refer to the response to request 30(a). The first amendment to the Blockware contract notes that Big Rivers will maintain Blockware's deposit in Section 2.

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Request 72: How frequently has Jackson Purchase Energy transferred deposits to other cooperatives over the past five years?

Response 72: Other than Blockware's deposit transfer in 2023, this has not taken place in the last five years.

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Request 73: Provide a breakdown by year and by type of service rendered of 3rd party contractor expenses for each of the last five calendar years and the test year.

Response 73: Please see Excel file provided separately.

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Request 74: Provide all documents that support the determination of the pro forma year average hourly wage.

Response 74: Please see Excel file provided separately

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Request 75: Explain what is meant by "Other Hours" as included in the Wages and Salaries annualization.

Response 75: "Other hours" includes no-pay hours, sick leave payout hours and vacation leave payout hours.

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Request 76: Provide documentation supporting the $225,000 in chemical spraying expense.

Response 76: The $225,000 in chemical spraying expense was derived from Jackson Purchase's approved 2024 budget. Also, please refer to response 10(a) from the Commission Staff's second data request.

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Request 77: Provide documentation supporting the $12,427.10/mile cost for the pro forma ROW cost.

Response 77: Please refer to response 10(a) from the Commission Staff's second data request.

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Request 78: Indicate the annual cost and expense associated with the employer portion of health care premiums in each of the last five calendar years.

Response 78: Please see Excel file provided separately.