Exhibit No. 138

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Ex 138

KCP&L GREATER MISSOURI OPERATIONS COMPANY (GMO)

INTEGRATED RESOURCE PLAN

2017 ANNUAL UPDATE

JUNE, 2017

** HIGHLY CONFIDENTIAL **

KCP&L
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Appendix A1: 2017 SPP Transmission Expansion Plan Project List

Appendix B: Capacity Balance Spreadsheets

Appendix C: Generation and Emissions for Each Alternative Resource Plan

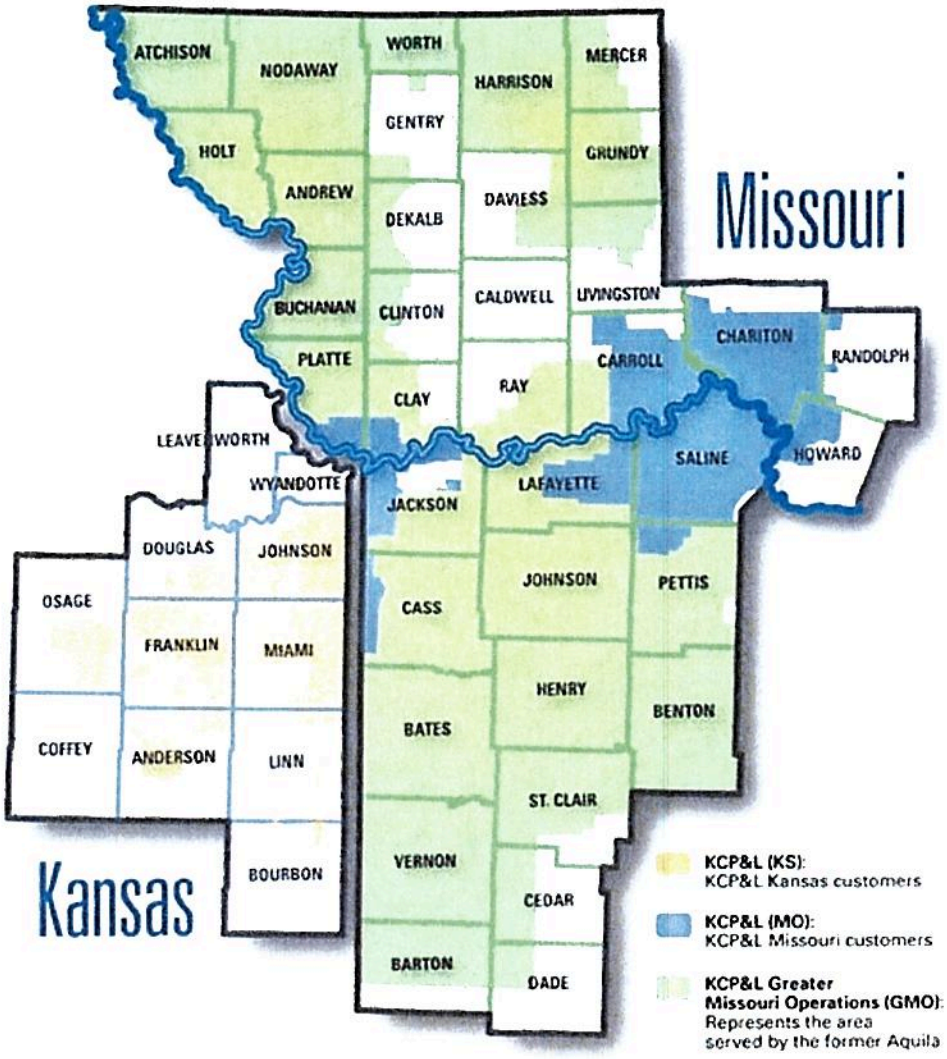
Appendix D: Economic Impact for Each Alternative Resource Plan

SECTION 1: EXECUTIVE SUMMARY

1.1 UTILITY INTRODUCTION

KCP&L Greater Missouri Operations Company ("GMO" or "Company") is an integrated, mid-sized electric utility serving portions of Northwest Missouri including St. Joseph and several counties south and east of the Kansas City, Missouri metropolitan area. GMO also provides regulated steam service to certain customers in the St. Joseph, Missouri area. A map of the Great Plains Energy (GPE) service territory which includes GMO is provided in Figure 1 below:

Figure 1: Great Plains Energy Service Territory



GMO is significantly impacted by seasonality with approximately one-third of its retail revenues recorded in the third quarter. Table 1 provides a snapshot of the number of customers served, estimated retail sales and peak demand for 2016.

Table 1: GMO Customers, NSI and Peak Demand

Jurisdiction	Number of Retail Customers	Retail Sales (MWh)	Net Peak Demand (MW)
GMO	320,535	8,028,772	1,904

GMO owns and operates a diverse generating portfolio and Power Purchase Agreements (PPA) to meet customer energy requirements. Two recent renewable generation projects that GMO has 20-year PPAs with are the Osborn and Rock Creek wind farms. The 80 MW Osborn wind farm achieved commercial operation on December 14, 2016 and 120 MW Rock Creek wind farm is currently under construction and expected to be commercially operating by December 31, 2017. Table 2, Figure 2, and Figure 3 reflect GMO's generation assets including wind PPAs in place by 2018.

Table 2: GMO Capacity and Energy By Resource Type

Capacity By Fuel Type	Capacity (MW)	% of Total Capacity	Estimated Energy (MWh)	% of Annual Energy
Coal	905	37%	4,600,953	76%
Oil	60	2%	-	0%
Nat. Gas	1,109	45%	62,353	1%
Wind	359	15%	1,366,920	23%
Landfill Gas	1.6	0.1%	12,447	0.2%
Solar	3	0.1%	4,704	0.1%
Total	2,438	100%	6,047,377	100%

* Wind capacity is based upon nameplate capacity

Figure 2: GMO Capacity By Resource Type

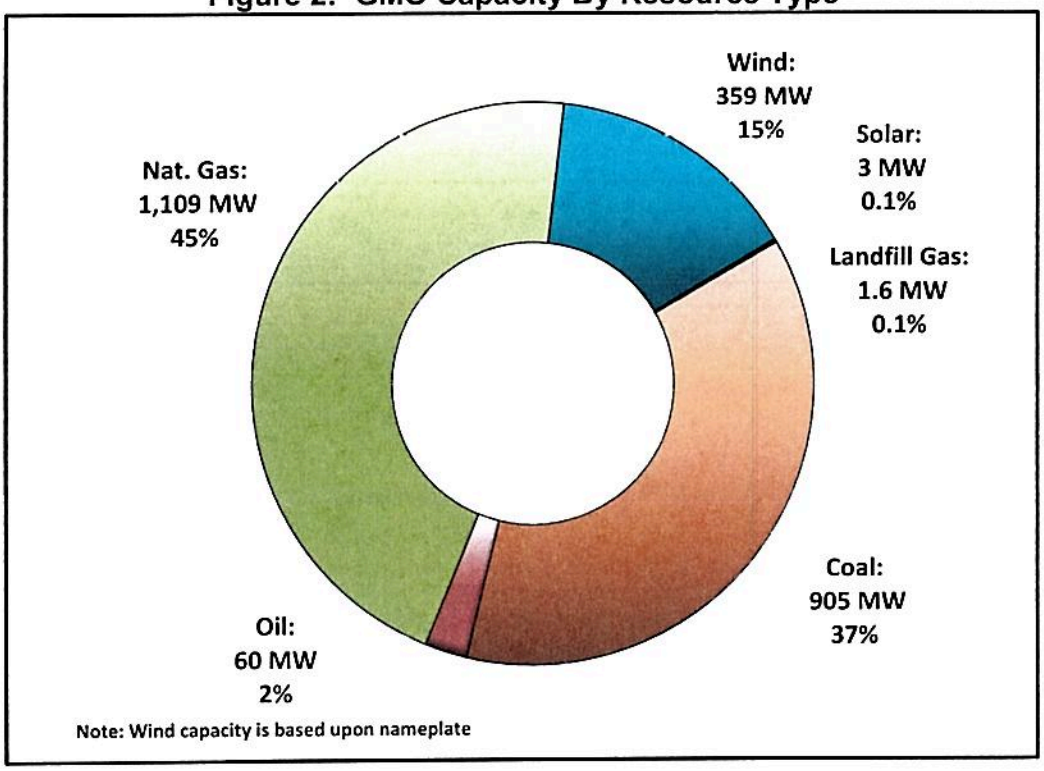
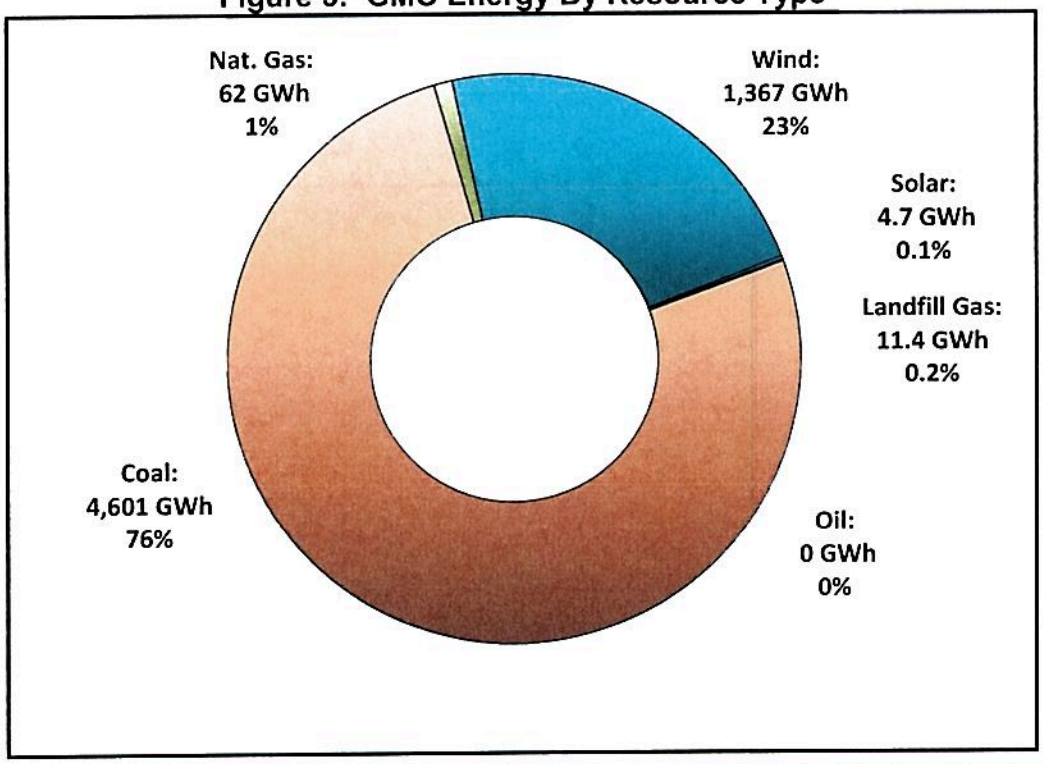


Figure 3: GMO Energy By Resource Type



1.2 CHANGES FROM THE 2015 TRIENNIAL IRP

Since the filing of the 2015 Triennial IRP, changing conditions, or major drivers, were refreshed to reflect the latest information and forecasts available to determine if the Preferred Plan and associated Resource Acquisition Strategy identified in 2015 Triennial IRP continue to be the company's path forward. The changing conditions, or major drivers, that have contributed GMO's need to develop new Alternative Resource Plans and selection of a new Preferred Plan include:

- Proposed and Potential Environmental Regulations
- Load, Fuel, and Emissions Forecast Projections
- Demand-Side Management (DSM) Program levels
- Significant changes to the SPP reserve margin requirements. In addition to lowering the reserve margin requirement from 13.6% to 12%, the requirement is going to be based on projected normal weather peak load rather than actual peal load. SPP also changed their wind accreditation requirements which effectively increased the accreditable wind capacity.

1.3 2017 ANNUAL UPDATE PREFERRED PLAN

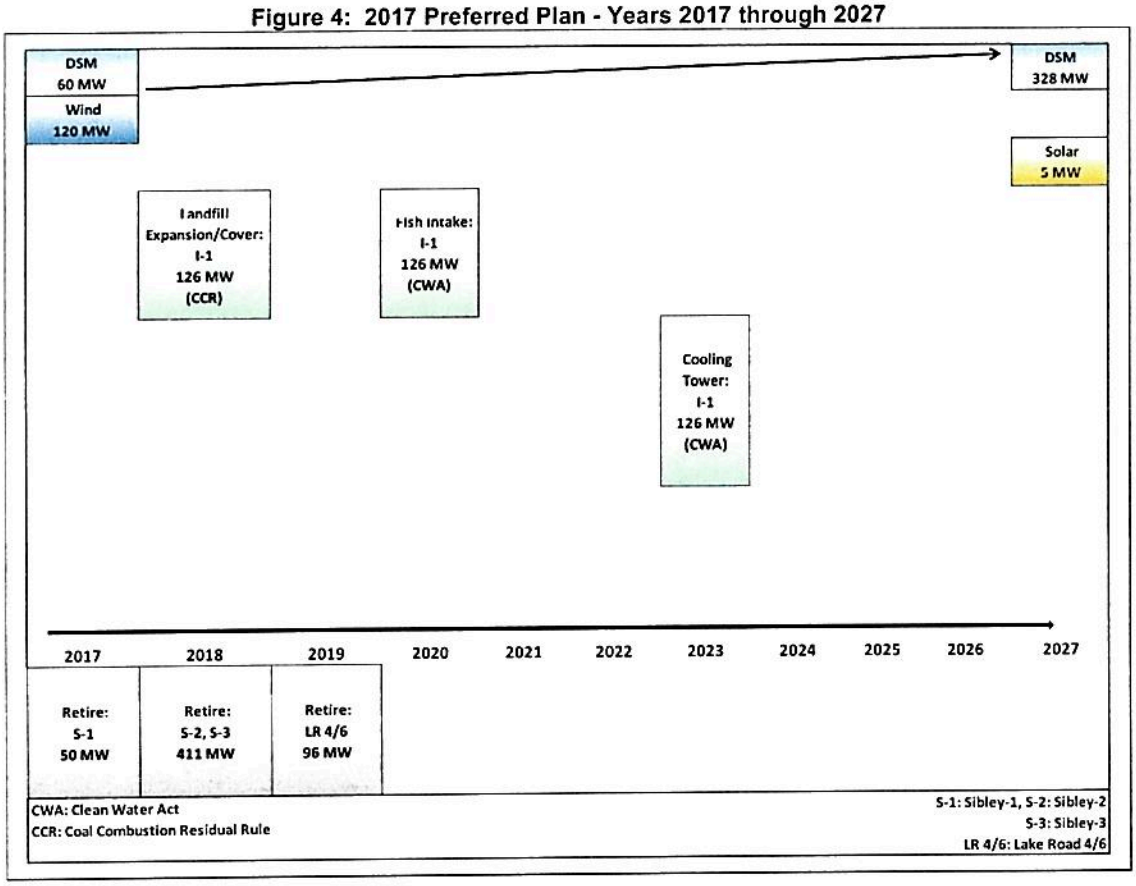
The 2017 Annual Update analysis has resulted in material changes to the Preferred Plan outlined in the 2015 Triennial IRP. The new Preferred Plan is comprised of the following components for years 2017 – 2027 shown in Figure 4 below. Based in part upon current Missouri RPS rule requirements, the Preferred includes a 5 MW solar addition currently expected to be in-service by 2028 and a 120 MW portion of a Missouri wind facility expected to be commercially operational by 2018. The DSM resources that were modeled consisted of a suite of eight residential and eight commercial programs three of which are demand response programs, two are educational programs, and eleven energy efficiency programs. Additionally, six demand-side rate (DSR) programs are currently modeled to commence in 2019. The

six DSR programs are: Time of Use, Time of Use with Electric Vehicle, Demand Rate, Demand Rate with Electric Vehicle, Real Time Pricing, and Inclining Block Rate.

The Preferred Plan reflects Sibley Units 2 and 3 retiring by 2019 and Lake Road 4/6 retiring by 2020. It should be noted that Sibley-1 is being retired from electric service in June, 2017 and not considered as having accredited capacity due to a safety-related boiler issue. However, the Sibley-1 boiler will remain in service to provide start-up steam to Sibley- 3 until the station is retired.

Drivers that contributed to these retirement decisions includes Ozone National Ambient Air Quality Standards (NAAQS), PM NAAQS, Clean Water Act Section 316(a) and (b), Coal Combustion Residuals Rule, Effluent Guidelines, Clean Power Plan as well as long term forecasts of low natural gas prices.

Figure 4: 2017 Preferred Plan - Years 2017 through 2027



SECTION 6: INTEGRATED RESOURCE PLAN AND RISK ANALYSIS UPDATE

6.1 CHANGES FROM THE 2015 TRIENNIAL IRP

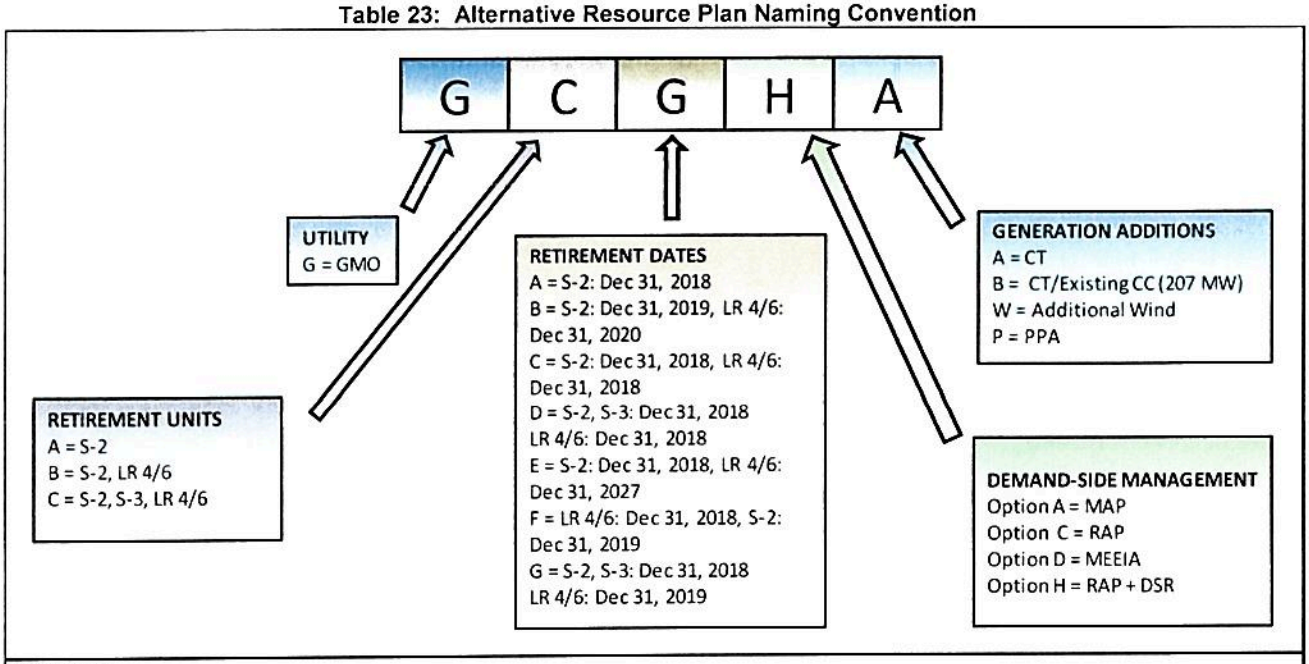
Since the filing of the 2015 Triennial IRP, changing conditions, or major drivers, were refreshed to reflect the latest information and forecasts available to determine if the Preferred Plan and associated Resource Acquisition Strategy identified in 2015 Triennial IRP continue to be the company's path forward. The information and forecasts that have been updated for the 2017 Annual Update included:

- Proposed and Potential Environmental Regulations
- Load Forecast Projections
- Demand-Side Management Program levels
- SPP reserve margin requirement reduced from 13.6% to 12%

6.2 ALTERNATIVE RESOURCE PLAN NAMING CONVENTION

Alternative Resource Plans (ARP) were developed using a combination of supply-side resources, demand-side resources, various resource addition timings, as well as generation retirement options and timings. Because some of the supply-side technology candidates were either considerably more costly in comparison to other technologies considered and/or permitting is currently expected to be extremely difficult to achieve, only a portion of the candidates were utilized in development of APRs. The naming convention utilized for the ARPs developed for the 2017 Annual Update is shown in Table 23 and an overview of the ARPs is provided in Table 24 and Table 25 below.

Table 23: Alternative Resource Plan Naming Convention



Definitions:

S-2: Sibley-2 PPA: Power Purchase Agreement MAP: Maximum Achievable Potential CC - Combined Cycle

S-3: Sibley-3 CT - Combustion Turbine RAP: Realistic Achievable Potential DSR: Demand-Side Rates

LR 4/6: Lake Road 4/6 MEEIA: Missouri Energy Efficiency Investment Act Cycle II

Table 24: Alternative Resource Plan Overview

Plan Name	DSM Level	Retire	Renewable Additions		Generation Additions (if needed)
GAACA	Option C	Sibley-2: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	n/n
GBBCA	Option C	Sibley-2: Dec 31, 2019 Lake Road 4/6: Dec 31, 2020	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2033
GBCAA	Option A	Sibley-2: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	n/n
GBCCA	Option C	Sibley-2: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2033
GBCCW	Option C	Sibley-2: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	200 MW of Additional Wind in 2018
GBCDA	Option D	Sibley-2: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2020 207 MW CT in 2030
GBECA	Option C	Sibley-2: Dec 31, 2018 Lake Road 4/6: Dec 31, 2027	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2033
GBFCA	Option C	Sibley-2: Dec 31, 2019 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2033

Table 25: Alternative Resource Plan Overview (continued)

Plan Name	DSM Level	Retire	Renewable Additions		Generation Additions (if needed)
GCDAA	Option A	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	414 MW CT in 2019
GCDCA	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	414 MW CT in 2019
GCDCB	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW Existing CC in 2018 207 MW CT in 2019
GCDCP	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2033 207 MW CT in 2036
GCDDA	Option D	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	414 MW CT in 2019 207 MW CT in 2021 207 MW CT in 2033
GCGCP	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Lake Road 4/6: Oct 1, 2019	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2033 207 MW CT in 2036
GCGHP	Option H	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Lake Road 4/6: Oct 1, 2019	Solar: 2027 - 5 MW	Wind: 2017 - 120 MW	207 MW CT in 2034

Refer to Appendix B, Capacity Balance Spreadsheets, for tables which provide the GMO forecast of capacity balance over the twenty-year planning period for each of the Alternative Resource Plans outlined above. These capacity forecasts include renewable and traditional generation additions. The capacity for wind facilities is based on SPP's criteria for calculating wind net capability using actual generation or wind data. Solar capacity is based on SPP criteria indicating that absent a net capability calculation, 10% of the facility's nameplate rating be used.

6.3 REVENUE REQUIREMENT

For each of the Alternative Resource Plans developed, integrated analysis yielded an expected value of the Net Present Value of Revenue Requirement shown in Table 26 below.

Table 26: Twenty-Year Net Present Value Revenue Requirement

Rank (L-H)	Plan	NPVRR ($MM)	Delta ($MM)
1	GCGHP	9,768	$ -
2	GCDCP	9,826	$ 58
3	GCGCP	9,827	$ 59
4	GBFCA	10,046	$ 279
5	GBCCA	10,046	$ 279
6	GBBCA	10,049	$ 282
7	GBCAA	10,059	$ 292
8	GAACA	10,070	$ 302
9	GBECA	10,079	$ 312
10	GBCCW	10,079	$ 312
11	GCDCA	10,201	$ 433
12	GCDCB	10,217	$ 450
13	GCDAA	10,247	$ 479
14	GBCDA	10,255	$ 488
15	GCDDA	10,439	$ 672

6.4 PERFORMANCE MEASURES

A summary tabulation of the expected value of all performance measures is provided in Table 27 below. Detailed results behind this summary tabulation are attached in Appendix D, Economic Impact for Each Alternative Resource Plan.

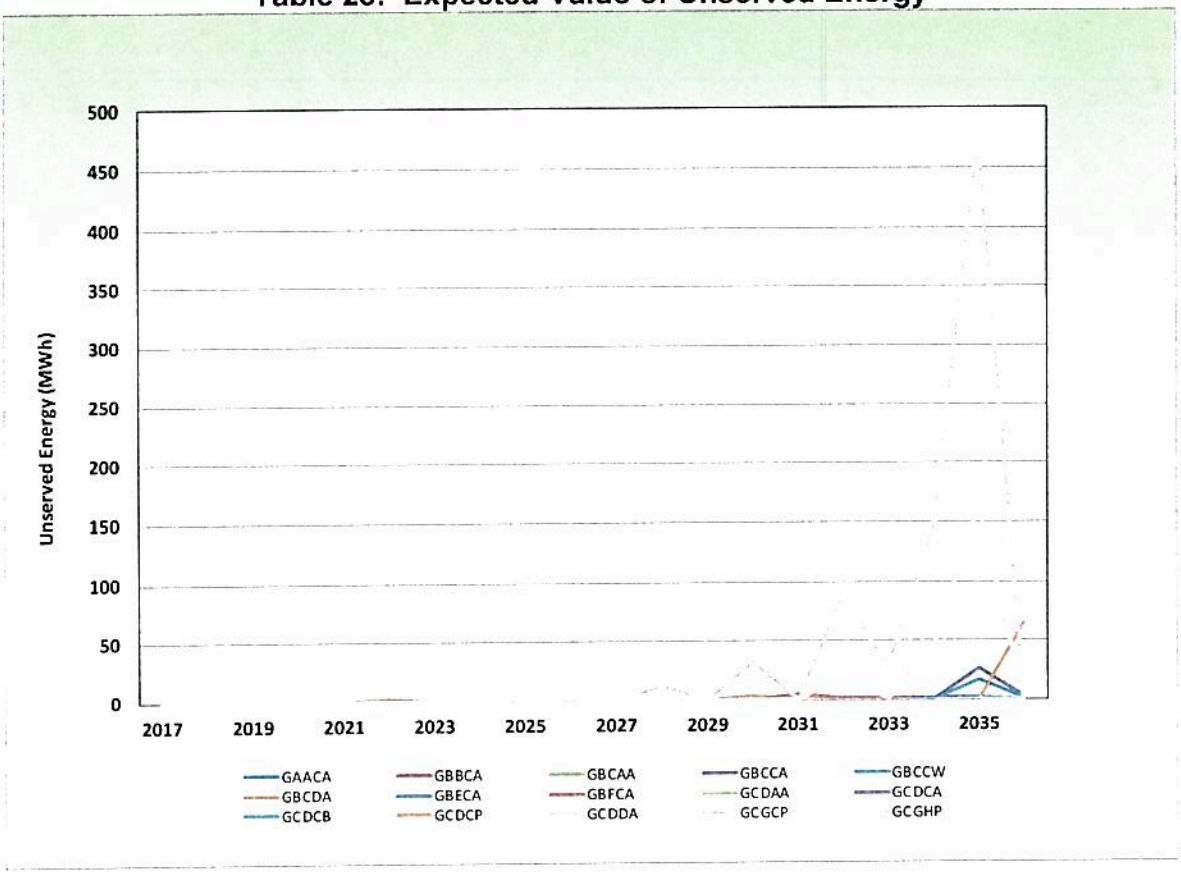
Table 27: Expected Value of Performance Measures ** Highly Confidential **

Plan	NPVRR ($MM)	Levelized Annual Rates ($/KW-hr)	Maximum Rate Increase
GCGHP	9,768	0.115	5.40%
GCDCP	9,826	0.115	5.34%
GCGCP	9,827	0.115	5.34%
GBFCA	10,046	0.118	6.41%
GBCCA	10,046	0.118	6.41%
GBBCA	10,049	0.118	6.52%
GBCAA	10,059	0.120	6.42%
GAACA	10,070	0.118	6.46%
GBECA	10,079	0.119	6.47%
GBCCW	10,079	0.118	5.74%
GCDCA	10,201	0.119	10.06%
GCDCB	10,217	0.119	6.69%
GCDAA	10,247	0.121	11.24%
GBCDA	10,255	0.117	6.04%
GCDDA	10,439	0.118	11.66%

6.5 UNSERVED ENERGY

The expected value of unserved energy for all GMO Alternative Resource Plans is provided in Table 28 below.

Table 28: Expected Value of Unserved Energy



6.6 JOINT-PLANNING KCP&L/GMO RESOURCE PLANS

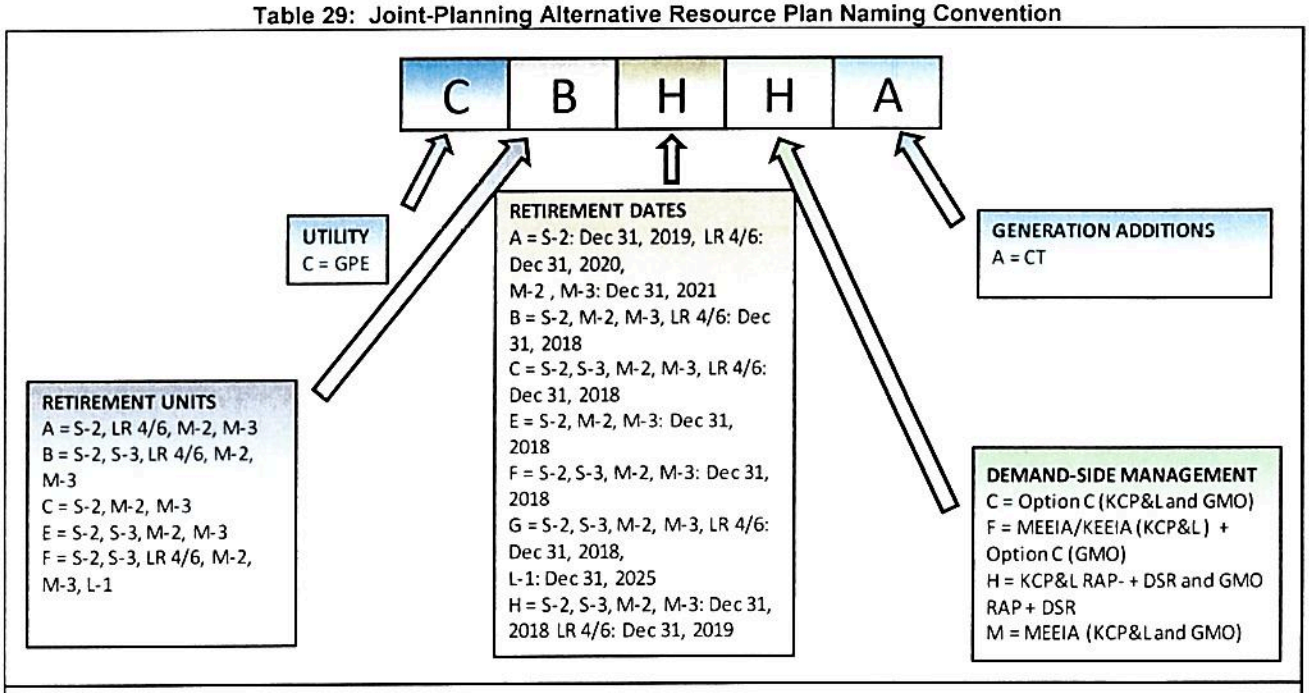
GMO also considers it prudent resource planning to develop and analyze alternative resource plans that are based upon KCP&L and GMO combining resources. Evaluating alternative resource plans on a joint planning basis can provide a platform to determine if joint planning "serves the public interest" as mandated in 4 CSR 240-22.010 Policy Objectives.

Joint-planning Alternative Resource Plans were developed to reflect combinations of the KCP&L and GMO Alternative Resource Plans. For example, combined company plan CBHHA is the combination of KCP&L Alternative Resource Plan KABHA (retire Montrose 2 and 3 by 2019 and DSM Option H) and GMO Alternative Resource Plan GCGHP (retire Sibley 2 and Sibley-3 retire by 2019, Lake Road 4/6 retire by 2020 and DSM Option H). It should be noted that Sibley-1 is being retired from electric service in June, 2017 and not considered as having accredited capacity due to a safety-related boiler issue. However, the Sibley-1 boiler will remain in service to provide start-up steam to Sibley- 3 until the station is retired.

The NPVRR for each joint-planning Alternative Resource Plan was determined under the same 18 scenarios analyzed for the stand alone companies. For example, electricity market prices, natural gas prices, CO_2 allowance prices, etc. were unchanged from the stand-alone company scenarios.

The plan-naming convention utilized for the joint-planning Alternative Resource Plans developed is shown in Table 29. The Alternative Resource Plans were developed using various capacities of supply-side resources and demand-side resources. In total, five joint-planning Alternative Resource Plans were developed for the integrated resource analysis for the 2017 Annual Update. An overview of the Alternative Resource Plans is shown in Table 30 below.

Table 29: Joint-Planning Alternative Resource Plan Naming Convention



Definitions:

S-2: Sibley-2	M-2: Montrose-2	MEEIA: Missouri Energy Efficiency Investment Act Cycle II	CT - Combustion Turbine
S-3: Sibley-3	M-3: Montrose-3	KEEIA: Kansas Energy Efficiency Investment Act	
LR 4/6: Lake Road 4/6	L-1: LaCygne-1	DSR: Demand-Side Rates	

Table 30: Overview of Joint-Planning Resource Plans

Plan Name	DSM Level	Retire	Renewable Additions		Generation Addition (if needed)
CAACA	Option C	Sibley-2: Dec 31, 2019 Lake Road 4/6: Dec 31, 2020 Montrose-2: Dec 31, 2021 Montrose-3: Dec 31,2021	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	n/n
CABCA	Option C	Sibley-2: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	n/n
CABFA	Option F	Sibley-2: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	207 MW of CT in 2033 207 MW of CT in 2036
CBCCA	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	207 MW of CT in 2033 207 MW of CT in 2036
CBCFA	Option F	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	207 MW of CT in 2027 207 MW of CT in 2030 207 MW of CT in 2033 207 MW of CT in 2036

Table 31: Overview of Joint-Planning Resource Plans (continued)

Plan Name	DSM Level	Retire	Renewable Additions		Generation Addition (if needed)
CBHCA	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose 3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2019	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	207 MW of CT in 2033 207 MW of CT in 2036
CBHHA	Option H	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2019	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	n/n
CBHMA	Option M	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2019	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	207 MW of CT in 2020 207 MW of CT in 2025 207 MW of CT in 2029 207 MW of CT in 2032 414 MW of CT in 2036
CCECA	Option C	Sibley-2: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	n/n
CEFCA	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	207 MW of CT in 2036
CFGCA	Option C	Sibley-2: Dec 31, 2018 Sibley-3: Dec 31, 2018 Montrose-2: Dec 31, 2018 Montrose-3: Dec 31, 2018 Lake Road 4/6: Dec 31, 2018 LaCygne-1: Dec 31, 2025	Solar: 2027 - 12 MW	Wind: 2018 - 300 MW	207 MW of CT in 2027 207 MW of CT in 2032 207 MW of CT in 2035

Results for each of the joint-planning Alternative Resource Plans are shown in Table 32 below.

Table 32: Joint-Planning Twenty-Year Net Present Value Revenue Requirement

Rank (L-H)	Plan	NPVRR ($MM)	Delta ($MM)
1	CBHHA	$ 31,223	$ -
2	CBCCA	$ 31,430	$ 207
3	CBHCA	$ 31,432	$ 209
4	CEFCA	$ 31,461	$ 238
5	CFGCA	$ 31,563	$ 340
6	CBCFA	$ 31,623	$ 400
7	CABCA	$ 31,669	$ 446
8	CAACA	$ 31,691	$ 468
9	CABFA	$ 31,720	$ 497
10	CCECA	$ 31,745	$ 522
11	CBHMA	$ 31,842	$ 619

The joint-planning Alternative Resource Plan (ARP) CBHHA provided the lowest Net Present Value Revenue Requirement (NPVRR). This plan consists of retiring Sibley-2, Sibley-3, Montrose-2, and Montrose-3 by 2019 and retiring Lake Road 4/6 by 2020. The next lowest NPVRR plan was ARP CBCCA consisting of retiring Sibley-2, Sibley-3, Lake Road 4/6, Montrose-2, and Montrose-3 by 2019. The lowest NPVRR plan, CBHHA, included RAP level DSM programs for GMO, RAP- level DSM programs for KCP&L as well as Demand-Side Rates for both utilities. This plan also included retaining Lake Road 4/6 until December, 2019 to provide additional capacity until DSM programs implementation plans materialized as expected. As stated earlier, Sibley-1 will be retired from electric service in June, 2017. However, the Sibley-1 boiler will remain in service to provide start-up steam to Sibley- 3 until the station is retired.

Table 33 and Table 34 show the expected value of NPVRR for the joint plans with and without CO_2 restrictions. The "Without" CO_2 restrictions shows the expected value over the nine scenarios that have $0 CO_2 emission allowance cost. The "With" CO_2 restrictions shows the expected value over the nine scenarios that include the Company's non-zero CO_2 emission allowance forecast. Under the scenarios with CO_2 restrictions, ARP CBHHA which includes retirement of Sibley-2, Sibley-3, Montrose-2 and Montrose-3 is the lowest cost plan. Under scenarios without CO_2 restrictions, the

same ARP, CBHHA, was the lowest cost plan as well. Given the results of the joint plans, no changes to the GMO or KCP&L Preferred Plans were warranted.