VOLUME 1:

EXECUTIVE SUMMARY

KCP&L GREATER MISSOURI OPERATIONS COMPANY (GMO)

INTEGRATED RESOURCE PLAN

4 CSR 240-22.010

CASE NO. EO-2012-0324

APRIL, 2012

TABLE OF CONTENTS

SECTION 1: INTRODUCTION 1
1.1 IRP REPORT STRUCTURE 1
1.2 WAIVERS 2
1.3 IRP DEVELOPMENT 2
SECTION 2: GMO SYSTEM OVERVIEW 4
SECTION 3: LOAD FORECAST INFORMATION 8
SECTION 4: PREFERRED RESOURCE PLAN SELECTION 19
4.1 ALTERNATIVE RESOURCE PLAN DEVELOPMENT 19
4.2 SELECTION OF PREFERRED RESOURCE PLAN 24
SECTION 5: CRITICAL UNCERTAIN FACTORS 27
SECTION 6: PERFORMANCE MEASURES 28
SECTION 7: COMPANY FINANCIAL RATIOS 30
SECTION 8: RESOURCE ACQUISITION INITIATIVES 31
SECTION 9: MAJOR RESEARCH PROJECTS 34
9.1 DEMAND-SIDE MANAGEMENT PROJECTS 34
9.1.1 DEMAND-SIDE MANAGEMENT MARKET POTENTIAL STUDY 34
9.1.2 SMARTGRID DEMONSTRATION PROJECT 35
9.1.3 LED LIGHTING COLLABORATION PROJECT WITH EPRI 35

TABLE OF TABLES

Table 1: GMO Customers, NSI and Peak Demand....5
Table 2: GMO Capacity and Energy By Source....6
Table 3: MPS Energy with and without DSM Impacts (GWh)....10
Table 4: MPS Peak Demand with and without DSM Impacts (MW)....12
Table 5: SJLP Energy with and without DSM Impacts (GWh)....15
Table 6: SJLP Peak with and without DSM Impacts (MW)....17
Table 7: GMO Plan Naming Convention....20
Table 8: Overview of Alternative Resource Plans....21
Table 9: Overview of Alternative Resource Plans....22
Table 10: Overview of Alternative Resource Plans....23
Table 11: GMO Preferred Resource Plan....24
Table 12: GMO Forecast of Capacity Balance - Preferred Plan **Highly Confidential**....26
Table 13: Alternative Plans for Each Uncertain Factor....27
Table 14: Financial Performance - Preferred Plan....29
Table 15: Mega Study Major Milestone Schedule....32
Table 16: Mega Study - Sibley Station ** Highly Confidential **....33
Table 17: Mega Study – Lake Road 4/6 ** Highly Confidential **....33
Table 18: DSM Research Projects....34
Table 19: DSM Potential Study Schedule....34

TABLE OF FIGURES

Figure 1: GMO Service Territory 4
Figure 2: GMO Capacity By Source Chart 6
Figure 3: GMO Generation By Source Chart 7
Figure 4: MPS System Energy 11
Figure 5: MPS System Peak 13
Figure 6: SJLP System Energy 16
Figure 7: SJLP System Peak 18

VOLUME 1: EXECUTIVE SUMMARY

SECTION 1: INTRODUCTION

The fundamental objective of the resource planning process shall be to provide the public with energy services that are safe, reliable and efficient, at just and reasonable rates, in a manner that serves the public interest and is consistent with state energy and environmental policies. This objective requires that the utility shall:

- Consider demand-side resources, renewable energy, and supply-side resources on an equivalent basis
- Use minimization of the present worth of long-run utility costs as the primary selection criterion
- Identify and where possible, quantitatively analyze any other considerations which are critical to meeting the fundamental objective of the resource planning process

1.1 IRP REPORT STRUCTURE

Nine (9) separate volumes comprise this IRP filing:

1. Volume 1: Executive Summary
2. Volume 2: Missouri Filing Requirements including an index of Rule compliance
3. Volume 3: Load Analysis and Load Forecasting
4. Volume 4: Supply-Side Resource Analysis
5. Volume 4.5: Transmission and Distribution Analysis
6. Volume 5: Demand-Side Resource Analysis

7. Volume 6: Integrated Resource Plan and Risk Analysis

8. Volume 7: Resource Acquisition Strategy Selection

9. Volume 8: Filing Schedule and Requirements

1.2 WAIVERS

No waivers were requested by GMO for this IRP filing.

1.3 IRP DEVELOPMENT

In developing the IRP filing, GMO has endeavored to meet all requirements of Missouri's IRP rules covered under 4 CSR 240-22. GMO's IRP spans the 2012-2031 planning horizon. Data necessary to complete evaluations were derived from recognized industry sources, consultants, publications and other sources as appropriate. Data sources are noted in the text of the report or in the appendices of a volume.

Several distinct tasks are included in the planning process:

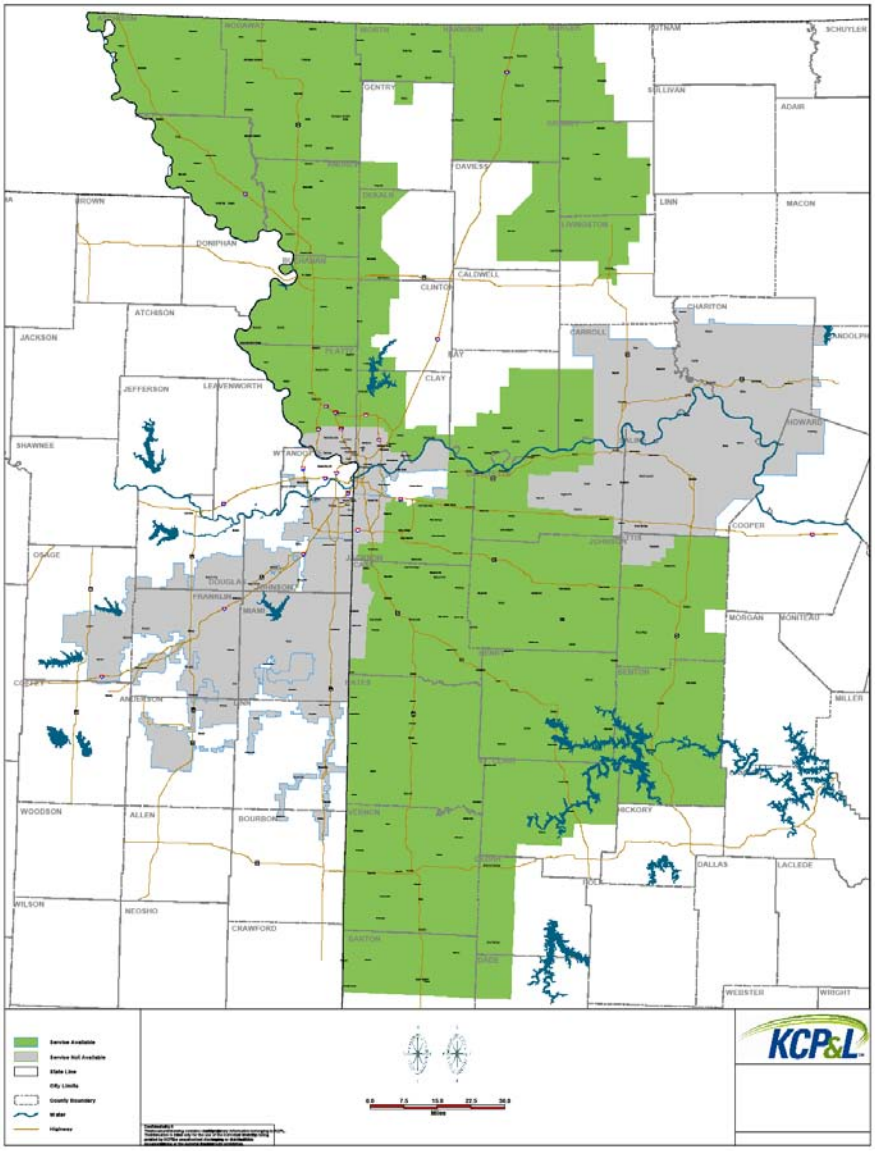
- A detailed forecast of future demand and energy requirements
- An assessment of Supply-Side resource alternatives
- An assessment of Demand-Side resource alternatives
- An assessment of Transmission and Distribution alternatives
- Integrated Analysis evaluates the economics of various combinations of demand-side and supply-side alternatives that are developed as alternative resource plans over the planning timeline
- Risk Analysis provides a comparison of the range of economic results for the alternative resource plans due to identified critical uncertain factors

- The adoption and executive approval of a Resource Acquisition Strategy that includes a preferred resource plan, implementation plan, and contingency plans

SECTION 2: GMO SYSTEM OVERVIEW

GMO 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 GMO service territory is provided in Figure 1 below:

Figure 1: GMO 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.

Table 1: GMO Customers, NSI and Peak Demand

Jurisdiction	Number of Retail Customers	Net System Input (MWh)	Projected Net Peak Demand (MW)
MPS	246,800	6,403,271	1,486
SJLP	65,600	2,288,111	430
Total	312,400	8,691,382	1,916

GMO owns and operates a diverse generating portfolio and Power Purchase Agreements (PPA) to meet customer energy requirements. In 2011, GMO signed a contract for a Power Purchase Agreement with NextEra Energy for the output of a 98.9 MW wind farm named Ensign, located in Gray County, Kansas. This new wind farm will be on-line by the end of 2012. This new PPA is in addition to the Gray County Wind Farm PPA with NextEra Energy which was signed in 2001 and is currently scheduled to expire in November of 2016. In addition to the new wind PPAs, GMO completed its first landfill gas project in St. Joseph, Missouri in 2011. This project collects the methane from the St. Joseph city landfill and burns it in a 1.6 MW internal combustion engine. This facility along with the wind PPAs will be used to fulfill GMO's Missouri Renewable Energy requirements for the next several years. Table 2, Figure 2, and Figure 3 reflect current GMO generation assets as well as PPAs signed in 2011 which will be available by the end of 2012. Because of the timing of the on-line date for the new wind PPA, the projected wind generation in 2012 is limited to primarily the existing Gray County Power Purchase Agreement.

Table 2: GMO Capacity and Energy By Source

2012 Capacity and Energy Resources				
Capacity By Fuel Type	**Capacity (MW)**	**% of Total Capacity**	**Estimated Energy (MWh)**	**% of Annual Energy**
Coal	1,015	43%	5,573,965	86%
Nuclear	75	3%	578,889	9%
Oil	61	2%	52	0%
Nat. Gas	1,062	45%	163,593	3%
Wind	159	7%	123,408	2%
LFG	2	0.1%	10,138	0.2%
Total	**2,373**	**100%**	**6,450,046**	**100%**
Note: Nuclear and Wind are PPA Resources				

Figure 2: GMO Capacity By Source Chart

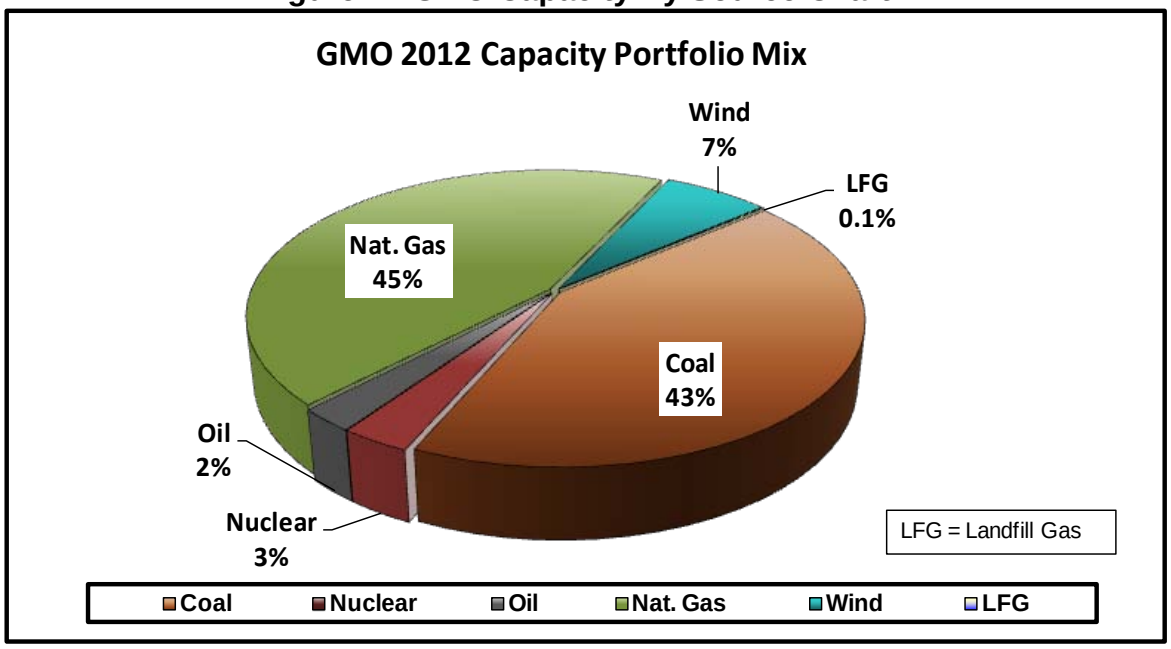
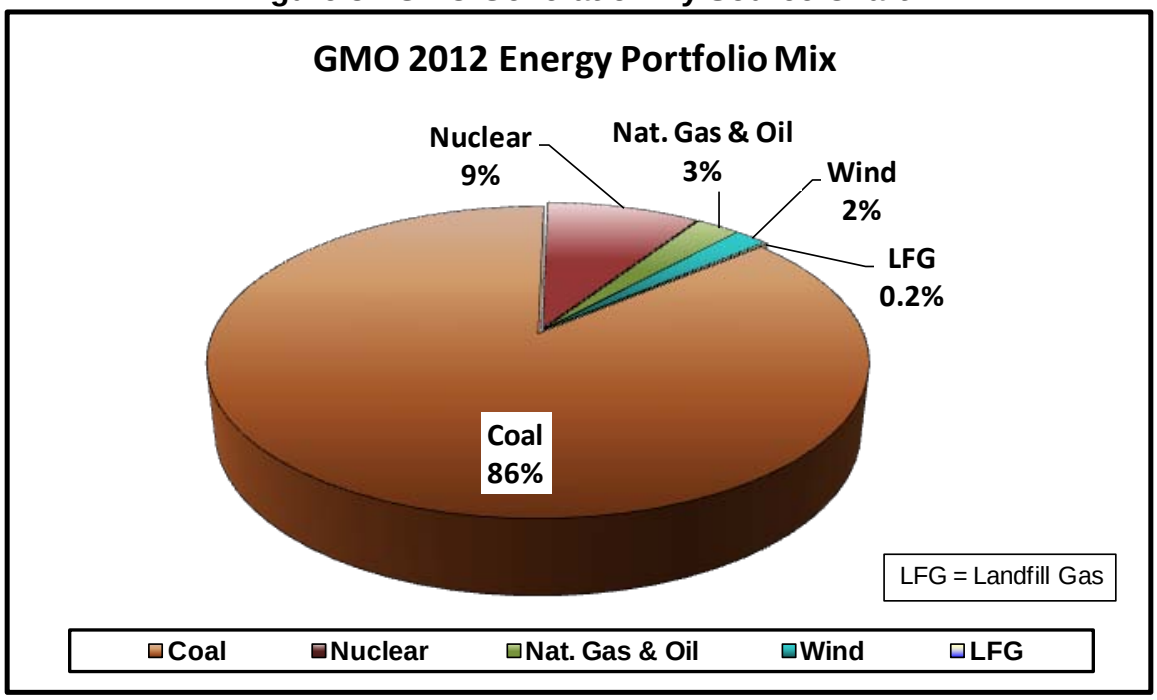


Figure 3: GMO Generation By Source Chart



SECTION 3: LOAD FORECAST INFORMATION

2. For each major class and for the total of all major classes, the base load forecasts for peak demand and for energy for the planning horizon, with and without utility demand-side resources, and a listing of the economic and demographic assumptions associated with each base load forecast;

GMO uses detailed end-use information along with statistical techniques to construct its load forecast. End-use information is obtained from KCP&L/GMO's semiannual appliance saturation surveys and from results published by the US Department of Energy (DOE) for the West North Central Midwest region. This information is used to construct end-use level forecasts of electricity sales based on economic forecasts of key drivers specific to the Kansas City and Saint Joseph metro areas. Load is forecasted separately for each tariff group in each utility.

The forecasts of economic drivers were obtained through a contract with Moody's Analytics and include the number of households, population, personal income, gross metro product (GMP), manufacturing GMP, total employment, manufacturing employment, and the consumer price index (CPI). These drivers were provided for three scenarios that were used to construct base, high and low scenarios for GMO's load forecasts.

The end-use forecasts were calibrated to monthly billing statistics. Heating, cooling and base loads from the end-use models were each calibrated to optimize the ability of these forecasts to explain the monthly billing data. These calibrated models were then used to forecast monthly electric energy sales. Using load research data collected from a sample of GMO's customers, this end-use forecast was allocated to each hour of the forecast period and peak demands were determined from these results.

The load forecast used in the IRP was prepared using actual sales data through June 2011 and an economic forecast produced in May 2011.

Table 3 and Figure 4 summarize the forecast of energy sales and Net System Input (NSI) for MPS by rate class. Gross energy does not include the impacts of energy efficiency and demand side management (DSM) program measures and thus represents energy sales that would have occurred if there had not been any company programs since 2008. Net energy includes the impacts of company programs. Neither gross nor net energy includes the impacts of programs that the company might adopt in the future as these are determined in the process for balancing supply and demand, discussed in a later section of this report. The energy sales shown in all but the last two columns are billed sales at the customers' meter. The last two columns show NSI, which includes line losses and company use and which represents the amount of generation and purchased power needed to serve the load for MPS. Sales for Resale (SFR) represent firm sales to other utilities under a FERC rate.

Growth rates are higher for Large Power, 2.8%, between 2011 and 2035 than for the smaller customers, 2.4% for Large General Service (GS), 2.0% for Small GS, and 1.4% for Residential.

Table 3: MPS Energy with and without DSM Impacts (GWh)

	Residential		Small GS		Large GS		Large Power		Lighting		SFR		Billed Total		Net System Input	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
2011	2,746	2,740	776	775	924	921	1,409	1,405	46	46	33	33	5,934	5,920	6,418	6,383
2012	2,766	2,747	792	791	940	932	1,433	1,420	46	46	33	33	6,010	5,968	6,445	6,403
2013	2,819	2,800	813	811	965	957	1,476	1,463	47	47	33	33	6,153	6,111	6,582	6,540
2014	2,871	2,851	834	832	986	978	1,514	1,501	48	48	34	34	6,286	6,244	6,724	6,682
2015	2,909	2,889	853	851	1,001	993	1,544	1,531	49	49	34	34	6,389	6,347	6,834	6,791
2016	2,945	2,926	872	870	1,016	1,008	1,576	1,563	49	49	34	34	6,492	6,450	6,962	6,920
2017	2,978	2,959	891	889	1,033	1,025	1,612	1,599	50	50	34	34	6,598	6,556	7,057	7,015
2018	3,014	2,995	910	909	1,054	1,046	1,654	1,641	50	50	35	35	6,717	6,675	7,183	7,141
2019	3,053	3,033	930	928	1,076	1,068	1,699	1,686	51	51	35	35	6,843	6,801	7,318	7,276
2020	3,093	3,074	949	947	1,098	1,090	1,742	1,729	51	51	35	35	6,968	6,926	7,471	7,429
2021	3,131	3,112	968	966	1,121	1,113	1,788	1,775	52	52	35	35	7,094	7,052	7,587	7,545
2022	3,172	3,152	986	984	1,144	1,136	1,834	1,821	52	52	35	35	7,223	7,181	7,724	7,682
2023	3,213	3,194	1,003	1,002	1,168	1,160	1,881	1,868	53	53	36	36	7,354	7,312	7,864	7,822
2024	3,259	3,239	1,022	1,020	1,194	1,186	1,931	1,918	53	53	36	36	7,494	7,452	8,034	7,992
2025	3,303	3,284	1,041	1,039	1,222	1,214	1,986	1,973	53	53	36	36	7,642	7,600	8,171	8,129
2026	3,351	3,332	1,061	1,059	1,252	1,244	2,044	2,031	54	54	36	36	7,798	7,756	8,338	8,296
2027	3,401	3,382	1,082	1,080	1,287	1,279	2,110	2,097	54	54	36	36	7,970	7,928	8,522	8,480
2028	3,455	3,436	1,102	1,101	1,323	1,315	2,176	2,163	55	55	37	37	8,148	8,106	8,735	8,693
2029	3,507	3,488	1,123	1,121	1,362	1,354	2,247	2,234	55	55	37	37	8,331	8,289	8,907	8,865
2030	3,563	3,543	1,144	1,142	1,402	1,394	2,321	2,308	55	55	37	37	8,523	8,481	9,111	9,069
2031	3,620	3,601	1,165	1,163	1,440	1,432	2,392	2,379	56	56	37	37	8,710	8,668	9,312	9,270
2032	3,682	3,663	1,186	1,185	1,480	1,472	2,465	2,452	56	56	37	37	8,908	8,866	9,547	9,505
2033	3,742	3,723	1,208	1,206	1,522	1,514	2,542	2,529	57	57	38	38	9,108	9,066	9,737	9,695
2034	3,805	3,785	1,230	1,228	1,567	1,559	2,625	2,612	57	57	38	38	9,321	9,279	9,964	9,922
2035	3,868	3,849	1,253	1,251	1,617	1,608	2,713	2,700	57	57	38	38	9,546	9,504	10,204	10,162
11-'15	1.4%	1.3%	2.4%	2.4%	2.0%	1.9%	2.3%	2.2%	1.7%	1.7%	0.3%	0.3%	1.9%	1.8%	1.6%	1.6%
15-'20	1.2%	1.2%	2.2%	2.2%	1.9%	1.9%	2.4%	2.5%	1.0%	1.0%	0.7%	0.7%	1.7%	1.8%	1.8%	1.8%
20-'25	1.3%	1.3%	1.9%	1.9%	2.2%	2.2%	2.7%	2.7%	0.8%	0.8%	0.6%	0.6%	1.9%	1.9%	1.8%	1.8%
25-30	1.5%	1.5%	1.9%	1.9%	2.8%	2.8%	3.2%	3.2%	0.7%	0.7%	0.5%	0.5%	2.2%	2.2%	2.2%	2.2%
30-'35	1.7%	1.7%	1.8%	1.8%	2.9%	2.9%	3.2%	3.2%	0.7%	0.7%	0.5%	0.5%	2.3%	2.3%	2.3%	2.3%
11-'35	1.4%	1.4%	2.0%	2.0%	2.4%	2.3%	2.8%	2.8%	1.0%	1.0%	0.5%	0.5%	2.0%	2.0%	2.0%	2.0%

Figure 4: MPS System Energy

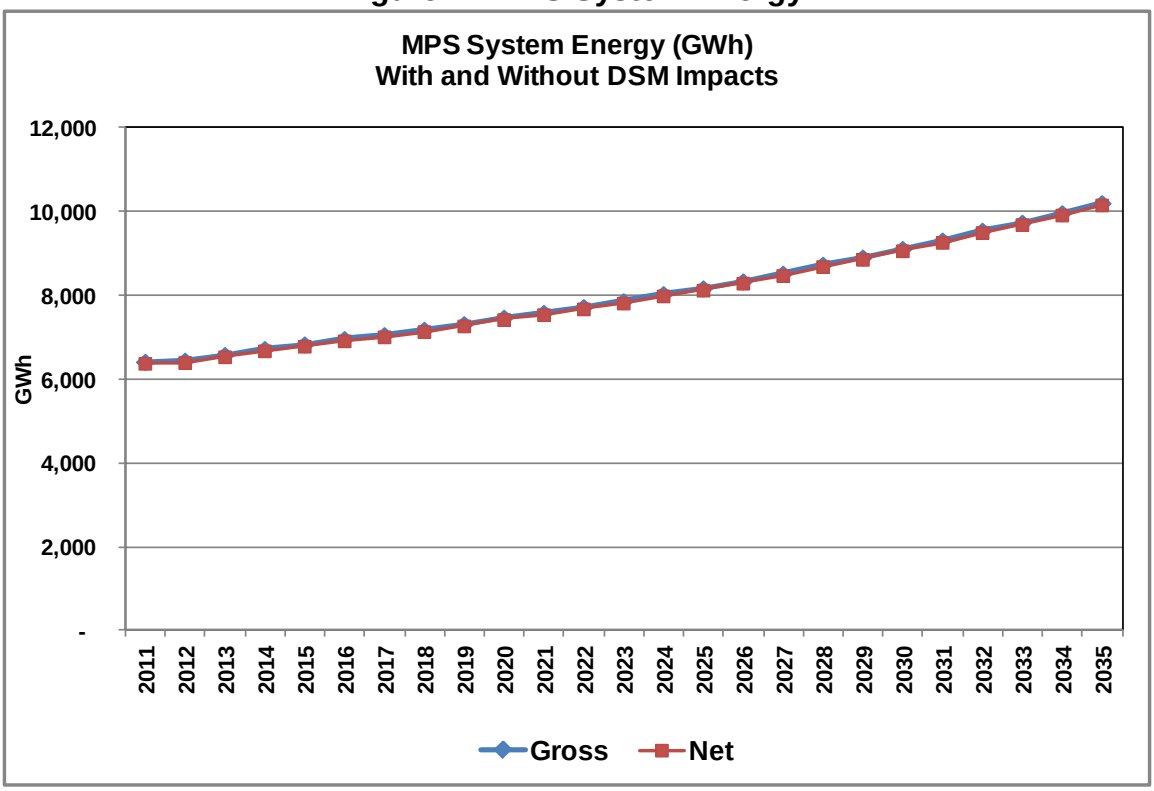


Table 4 reports the MPS peak demands by rate class. These numbers include line losses and company use.

Table 4: MPS Peak Demand with and without DSM Impacts (MW)

	Residential		Small GS		Large GS		Large Power		Lighting		SFR		System	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
2011	893	871	170	170	194	193	221	209	0	0	8	8	1,485	1,450
2012	902	876	176	176	201	200	227	226	0	0	8	8	1,514	1,486
2013	915	890	180	180	206	204	234	233	0	0	8	8	1,543	1,514
2014	931	905	184	184	209	208	240	239	0	0	7	7	1,571	1,542
2015	942	916	188	187	211	210	244	243	0	0	7	7	1,592	1,564
2016	951	926	191	191	214	213	249	248	0	0	8	8	1,614	1,585
2017	961	935	195	195	217	216	255	254	0	0	8	8	1,636	1,608
2018	972	958	199	198	221	220	262	261	0	0	8	8	1,661	1,645
2019	984	970	203	202	225	224	269	268	0	0	8	8	1,688	1,671
2020	996	982	206	206	229	228	276	275	0	0	7	7	1,714	1,697
2021	1,008	994	210	209	233	232	283	282	0	0	8	8	1,742	1,725
2022	1,021	1,007	213	213	238	236	290	289	0	0	8	8	1,770	1,753
2023	1,034	1,020	216	216	242	241	297	296	0	0	8	8	1,798	1,781
2024	1,048	1,035	220	219	246	245	305	304	0	0	8	8	1,827	1,811
2025	1,063	1,049	223	223	252	250	314	313	0	0	8	8	1,860	1,843
2026	1,078	1,064	227	226	257	256	323	322	0	0	8	8	1,893	1,876
2027	1,094	1,080	231	230	264	262	333	332	0	0	8	8	1,930	1,913
2028	1,111	1,097	235	234	270	269	343	342	0	0	8	8	1,967	1,951
2029	1,128	1,114	239	238	278	276	355	354	0	0	8	8	2,007	1,990
2030	1,145	1,131	243	242	285	284	366	365	0	0	8	8	2,047	2,030
2031	1,163	1,149	246	246	292	291	377	376	0	0	8	8	2,086	2,070
2032	1,181	1,167	250	250	300	298	389	388	0	0	8	8	2,128	2,111
2033	1,199	1,185	254	254	307	306	401	399	0	0	8	8	2,170	2,153
2034	1,218	1,204	258	258	316	314	413	412	0	0	8	8	2,214	2,197
2035	1,237	1,223	263	262	325	324	427	426	0	0	8	8	2,261	2,244
11-'15	1.3%	1.3%	2.5%	2.4%	2.2%	2.2%	2.6%	3.9%	0.0%	0.0%	-3.8%	-3.8%	1.8%	1.9%
15-'20	1.1%	1.4%	1.9%	1.9%	1.6%	1.6%	2.4%	2.4%	0.0%	0.0%	0.6%	0.6%	1.5%	1.7%
20-'25	1.3%	1.3%	1.6%	1.6%	1.9%	1.9%	2.6%	2.6%	0.0%	0.0%	0.5%	0.5%	1.6%	1.7%
25-30	1.5%	1.5%	1.7%	1.7%	2.5%	2.5%	3.1%	3.1%	0.0%	0.0%	1.6%	1.6%	1.9%	2.0%
30-'35	1.6%	1.6%	1.6%	1.6%	2.7%	2.7%	3.1%	3.1%	0.0%	0.0%	0.6%	0.6%	2.0%	2.0%
11-'35	1.4%	1.4%	1.8%	1.8%	2.2%	2.2%	2.8%	3.0%	0.0%	0.0%	0.0%	0.0%	1.8%	1.8%

Figure 5 summarizes the forecast of peak demands by year for MPS.

Figure 5: MPS System Peak

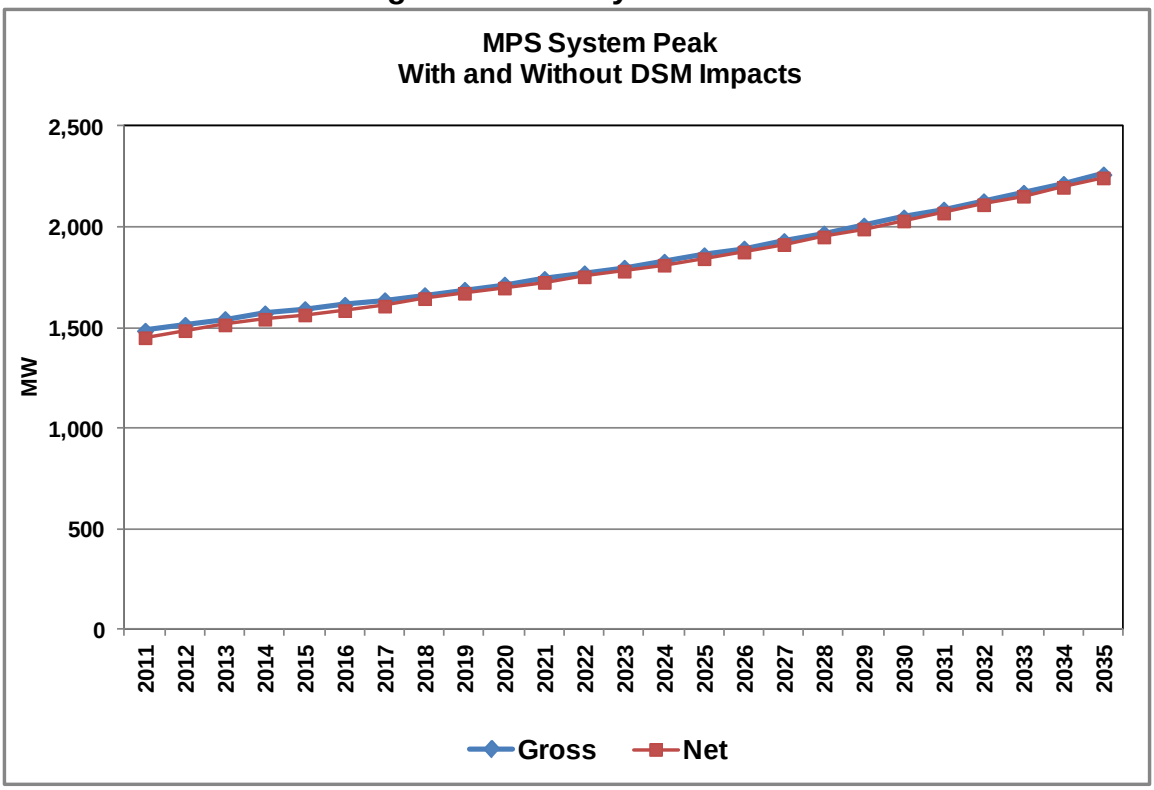


Table 5 and Figure 6 show the forecast for billed energy sales and NSI by rate class for SJLP. The growth rates for these sales are much lower compared to MPS mainly because the KC metro area has grown faster and is expected to growth faster than the Saint Joseph metro area. Residential sector sales are growing the slowest of the major classes in part because many federal energy standards have been directed at residential enduses.

Table 5: SJLP Energy with and without DSM Impacts (GWh)

	Residential		Small GS		Large GS		Large Power		Lighting		SFR		Billed Total		Net System Input	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
2011	778	776	104	104	375	372	845	840	22	22	-	-	2,124	2,114	2,265	2,255
2012	785	782	103	103	384	380	847	840	22	22	-	-	2,141	2,128	2,301	2,288
2013	785	782	103	103	386	382	851	844	23	23	-	-	2,147	2,134	2,303	2,289
2014	787	785	104	104	389	385	858	851	23	23	-	-	2,162	2,149	2,318	2,305
2015	791	788	105	105	395	391	870	864	24	24	-	-	2,184	2,171	2,343	2,329
2016	795	792	107	107	402	398	886	879	24	24	-	-	2,214	2,200	2,380	2,367
2017	798	795	109	109	409	405	901	894	24	24	-	-	2,241	2,228	2,403	2,390
2018	802	799	111	111	417	413	917	910	24	24	-	-	2,271	2,257	2,435	2,422
2019	807	804	113	113	425	421	933	927	24	24	-	-	2,303	2,289	2,469	2,456
2020	812	810	115	114	433	429	949	943	25	25	-	-	2,334	2,321	2,510	2,496
2021	817	815	117	116	441	438	966	959	25	25	-	-	2,366	2,353	2,537	2,524
2022	823	820	119	118	450	446	983	976	25	25	-	-	2,399	2,385	2,572	2,559
2023	828	826	120	120	458	454	1,000	993	25	25	-	-	2,431	2,418	2,607	2,594
2024	835	832	122	122	466	463	1,017	1,010	25	25	-	-	2,465	2,452	2,651	2,637
2025	841	838	124	124	475	471	1,035	1,028	25	25	-	-	2,499	2,486	2,680	2,667
2026	847	844	126	126	483	480	1,054	1,047	25	25	-	-	2,535	2,522	2,719	2,705
2027	854	851	128	127	492	489	1,073	1,066	25	25	-	-	2,572	2,559	2,758	2,745
2028	862	859	130	130	502	498	1,092	1,085	25	25	-	-	2,611	2,598	2,807	2,794
2029	869	866	132	132	513	509	1,111	1,104	25	25	-	-	2,650	2,636	2,841	2,828
2030	877	874	134	134	523	519	1,130	1,124	26	26	-	-	2,690	2,676	2,884	2,871
2031	885	883	136	136	533	529	1,150	1,143	26	26	-	-	2,730	2,717	2,928	2,914
2032	895	892	138	138	543	539	1,170	1,163	26	26	-	-	2,771	2,758	2,980	2,966
2033	903	900	141	140	554	550	1,190	1,183	26	26	-	-	2,813	2,800	3,016	3,003
2034	912	909	143	143	565	561	1,210	1,203	26	26	-	-	2,855	2,842	3,061	3,048
2035	920	918	145	145	577	573	1,230	1,223	26	26	-	-	2,898	2,884	3,107	3,094
11-'15	0.4%	0.4%	0.3%	0.3%	1.3%	1.2%	0.7%	0.7%	1.5%	1.5%	0.0%	0.0%	0.7%	0.7%	0.8%	0.8%
15-'20	0.5%	0.5%	1.7%	1.7%	1.9%	1.9%	1.8%	1.8%	0.9%	0.9%	0.0%	0.0%	1.3%	1.3%	1.4%	1.4%
20-'25	0.7%	0.7%	1.6%	1.6%	1.8%	1.9%	1.7%	1.8%	0.5%	0.5%	0.0%	0.0%	1.4%	1.4%	1.3%	1.3%
25-30	0.8%	0.9%	1.6%	1.6%	2.0%	2.0%	1.8%	1.8%	0.2%	0.2%	0.0%	0.0%	1.5%	1.5%	1.5%	1.5%
30-'35	1.0%	1.0%	1.6%	1.6%	2.0%	2.0%	1.7%	1.7%	0.2%	0.2%	0.0%	0.0%	1.5%	1.5%	1.5%	1.5%
11-'35	0.7%	0.7%	1.4%	1.4%	1.8%	1.8%	1.6%	1.6%	0.6%	0.6%	0.0%	0.0%	1.3%	1.3%	1.3%	1.3%

Figure 6: SJLP System Energy

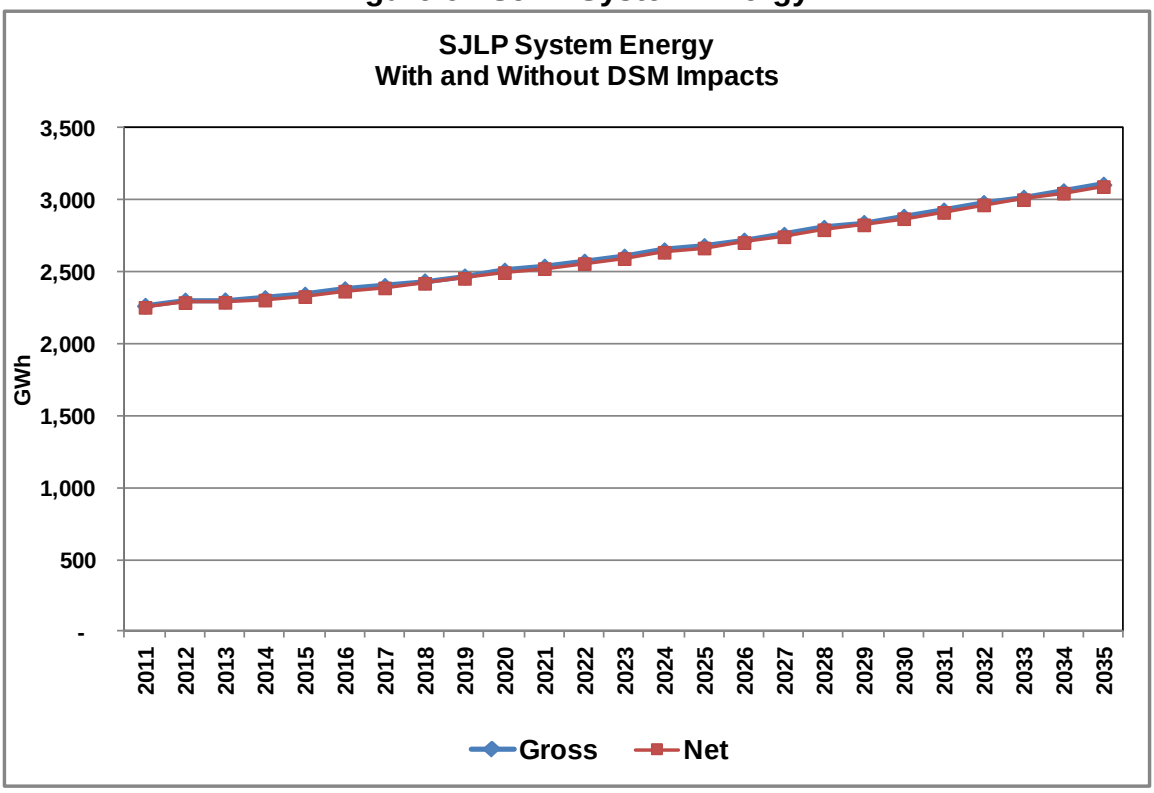


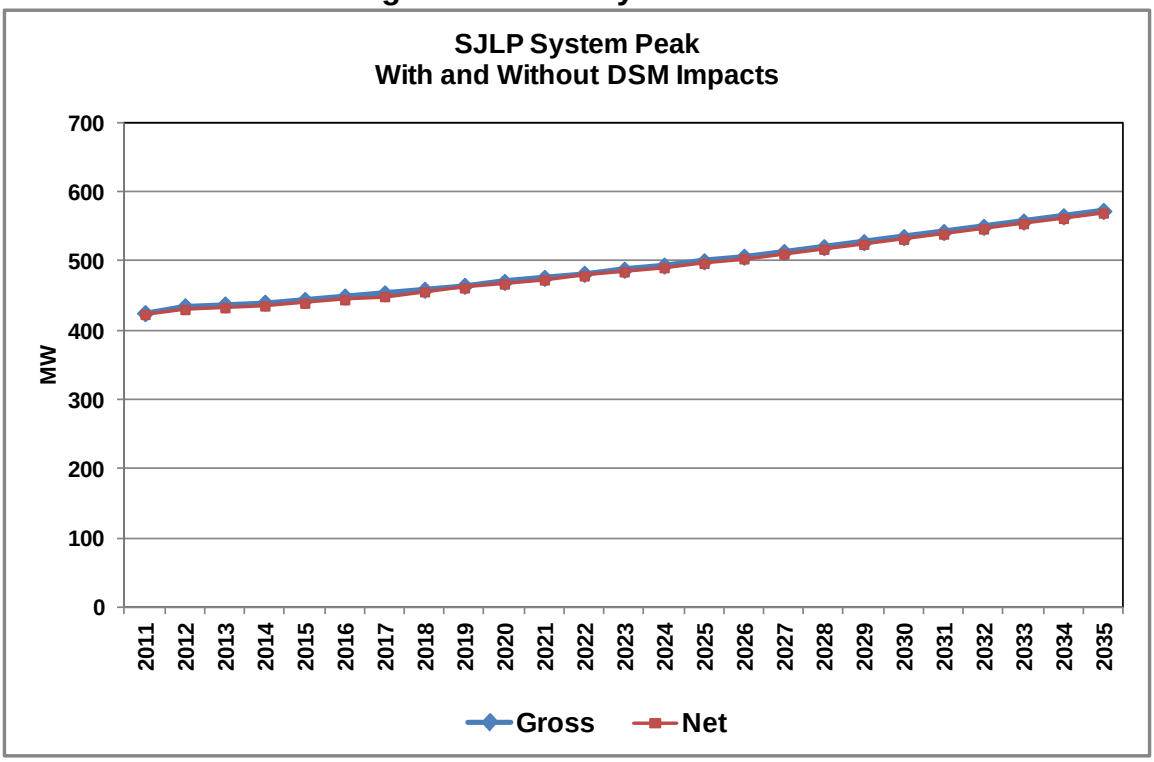
Table 6 summarizes the forecast of peak demands by customer class for SJLP.

Table 6: SJLP Peak with and without DSM Impacts (MW)

	Residential		Small GS		Large GS		Large Power		Lighting		SFR		System	
	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net	Gross	Net
2011	201	199	29	29	73	73	122	122	0	0	0	0	425	423
2012	197	194	26	26	81	80	131	130	0	0	0	0	435	430
2013	198	195	26	26	82	81	132	131	0	0	0	0	437	433
2014	198	195	26	26	82	82	133	132	0	0	0	0	440	435
2015	199	196	27	27	83	83	135	134	0	0	0	0	444	439
2016	200	197	27	27	85	84	137	137	0	0	0	0	449	444
2017	201	197	27	27	86	85	140	139	0	0	0	0	454	449
2018	202	200	28	28	87	87	142	141	0	0	0	0	459	456
2019	203	201	28	28	89	88	144	144	0	0	0	0	464	461
2020	204	203	29	29	91	90	147	146	0	0	0	0	470	467
2021	205	204	29	29	92	91	149	148	0	0	0	0	476	473
2022	207	205	30	29	94	93	152	151	0	0	0	0	482	479
2023	208	207	30	30	95	95	154	153	0	0	0	0	488	485
2024	210	208	30	30	97	96	157	156	0	0	0	0	494	491
2025	211	210	31	31	98	98	159	159	0	0	0	0	500	497
2026	213	212	31	31	100	99	162	161	0	0	0	0	506	503
2027	215	214	32	31	102	101	165	164	0	0	0	0	513	510
2028	217	215	32	32	103	103	168	167	0	0	0	0	520	517
2029	219	217	32	32	105	105	171	170	0	0	0	0	527	524
2030	221	219	33	33	107	107	174	173	0	0	0	0	535	532
2031	223	222	33	33	109	108	177	176	0	0	0	0	542	539
2032	225	224	34	34	111	110	180	179	0	0	0	0	550	547
2033	227	226	34	34	113	112	182	182	0	0	0	0	557	554
2034	229	228	35	35	115	115	185	184	0	0	0	0	565	562
2035	231	230	35	35	117	117	188	187	0	0	0	0	573	570
11-'15	-0.2%	-0.4%	-1.8%	-1.9%	3.3%	3.1%	2.5%	2.4%	0.0%	0.0%	0.0%	0.0%	1.1%	0.9%
15-'20	0.5%	0.7%	1.5%	1.5%	1.7%	1.7%	1.7%	1.7%	0.0%	0.0%	0.0%	0.0%	1.1%	1.2%
20-'25	0.7%	0.7%	1.4%	1.4%	1.6%	1.7%	1.7%	1.7%	0.0%	0.0%	0.0%	0.0%	1.2%	1.2%
25-30	0.9%	0.9%	1.4%	1.4%	1.8%	1.8%	1.7%	1.7%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%
30-'35	0.9%	0.9%	1.4%	1.4%	1.8%	1.8%	1.6%	1.6%	0.0%	0.0%	0.0%	0.0%	1.4%	1.4%
11-'35	0.6%	0.6%	0.9%	0.9%	2.0%	2.0%	1.8%	1.8%	0.0%	0.0%	0.0%	0.0%	1.2%	1.2%

Figure 7 summarizes the forecast of peak demands by year for SJLP.

Figure 7: SJLP System Peak



SECTION 4: PREFERRED RESOURCE PLAN SELECTION

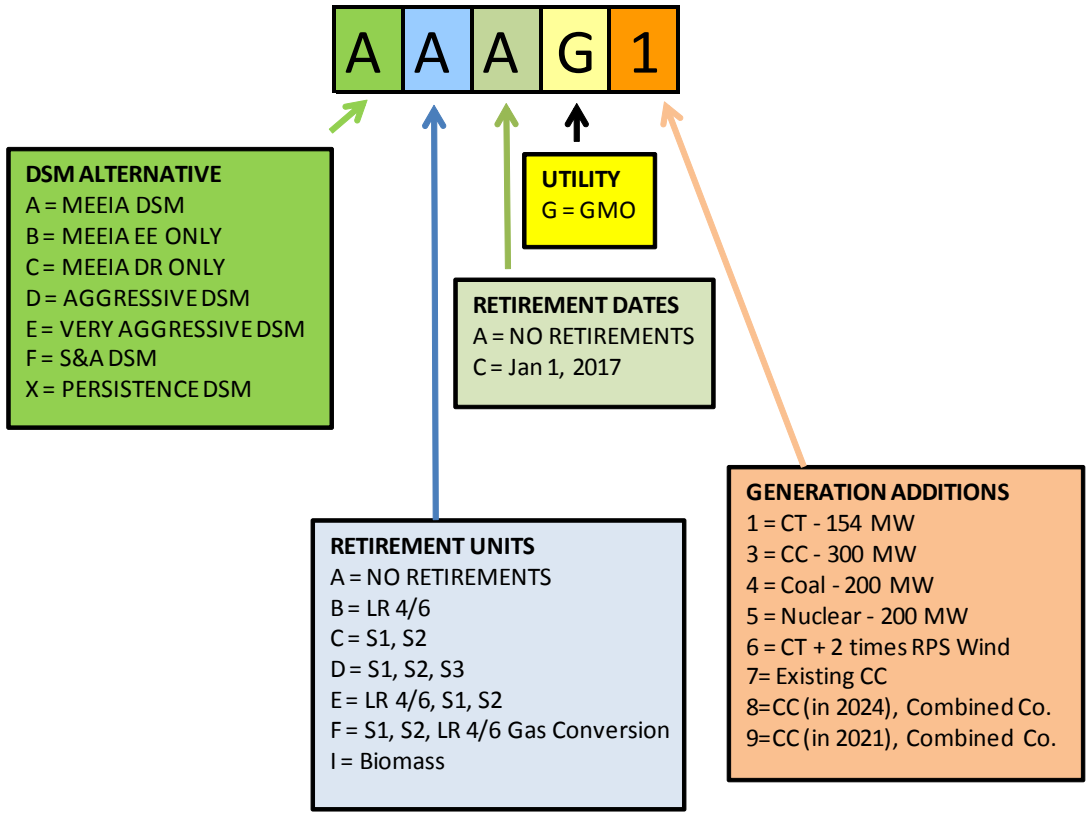
4.1 ALTERNATIVE RESOURCE PLAN DEVELOPMENT

3. A summary of the preferred resource plan to meet expected energy service needs for the planning horizon, clearly showing the demand-side resources and supply-side resources (both renewable and non-renewable resources), including additions and retirements for each resource type;

Alternative resource plans were developed using a combination of various capacities of supply-side sources, demand-side resources and resource addition timing. The plan-naming convention utilized for the alternative resource plans developed is shown in Table 7 below:

Table 7: GMO Plan Naming Convention

NAMING CONVENTION FOR ALTERNATIVE RESOURCE PLANS IN THE 2012 GMO IRP



Definitions:

DSM - Demand-Side Management	LR 4/6 - Lake Road 4/6	CT - Combustion Turbine
EE - Energy Efficiency	S1 - Sibley 1	CC - Combined Cycle
DR - Demand Response	S2 - Sibley 2	RPS - Renewable Portfolio Standard
	S3 - Sibley 3	
	Biomass - 10% Blending	

In total, twenty one alternative resource plans were developed for integrated resource analysis. Table 8, Table 9, and Table 10 represent an overview of each plan over the 2012 through 2031 planning period.

Table 8: Overview of Alternative Resource Plans

Resource	Plan AAAG1	Plan AAAG3	Plan ABCG1	Plan ACCG1
DSM	MEEIA DSM	MEEIA DSM	MEEIA DSM	MEEIA DSM
Solar	10 MW in 2018	10 MW in 2018	10 MW in 2018	10 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	150 MW in 2019	150 MW in 2019	150 MW in 2019	150 MW in 2019
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	100 MW in 2021
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	100 MW in 2024
Coal				
Coal				
Nuclear				
Nuclear				
Coal Retire			99 MW in 2017 (LR 4/6)	99 MW in 2017 (S 1-2)
Combustion Turbine	154 MW in 2014		154 MW in 2014	154 MW in 2014
Combustion Turbine	154 MW in 2026		154 MW in 2021	154 MW in 2021
Combustion Turbine	154 MW in 2031		154 MW in 2028	154 MW in 2028
Combustion Turbine				
Combined Cycle		300 MW in 2015		
Combined Cycle		300 MW in 2031		
Resource	**Plan ACCG3**	**Plan ACCG4**	**Plan ACCG5**	**Plan ACCG6**
DSM	MEEIA DSM	MEEIA DSM	MEEIA DSM	MEEIA DSM
Solar	10 MW in 2018	10 MW in 2018	10 MW in 2018	10 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	150 MW in 2019	150 MW in 2019	150 MW in 2019	300 MW in 2019
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	200 MW in 2021
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	200 MW in 2024
Coal		200 MW in 2021		
Coal		200 MW in 2029		
Nuclear			200 MW in 2021	
Nuclear			200 MW in 2029	
Coal Retire	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)
Combustion Turbine		154 M W 2014	154 M W 2014	154 M W 2014
Combustion Turbine				154 M W 2022
Combustion Turbine				154 M W 2029
Combustion Turbine				
Combined Cycle	300 MW in 2015			
Combined Cycle	300 MW in 2028			

Table 9: Overview of Alternative Resource Plans

Resource	Plan ACCG7	Plan ACCG8	Plan ACCG9	Plan ADCG1
DSM	MEEIA DSM	MEEIA DSM	MEEIA DSM	MEEIA DSM
Solar	10 MW in 2018	10 MW in 2018	10 MW in 2018	10 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	150MW in 2019	150MW in 2019	150MW in 2019	150 MW in 2019
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	100 MW in 2021
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	100 MW in 2024
Coal				
Coal				
Nuclear				
Nuclear				
Coal Retire	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)	463 MW in 2017 (S 1-2-3)
Combustion Turbine				154 MW in 2014
Combustion Turbine				462 MW in 2017
Combustion Turbine				154 MW in 2026
Combustion Turbine				154 MW in 2031
Combustion Turbine				
Combined Cycle	310 MW in 2013	300 MW in 2024	300 MW in 2021	
Combined Cycle	300 MW in 2028	300 MW in 2029	150MW in 2028	
Combined Cycle				

Resource	Plan AECG1	Plan AFCG1	Plan AICG9	Plan BCCG1
DSM	MEEIA DSM	MEEIA DSM	MEEIA DSM	MEEIA EE Only
Solar	10 MW in 2018	10 MW in 2018	10 MW in 2018	10 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	150 MW in 2019	150 MW in 2019	150 MW in 2019	150 MW in 2019
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	100 MW in 2021
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	100 MW in 2024
Coal			Co-Fire Biomass (S - 3)	
Coal				
Nuclear				
Nuclear				
Coal Retire	198 MW in 2017 (LR 4/6, S 1-2)	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)
Combustion Turbine	154 MW in 2014	154 MW in 2014		154 MW in 2014
Combustion Turbine	154 MW in 2017	154 MW in 2021		154 MW in 2017
Combustion Turbine	154 MW in 2024	154 MW in 2028		154 MW in 2026
Combustion Turbine	154 MW in 2030			154 MW in 2030
Combustion Turbine				
Combined Cycle		S 1 - 2, LR 4/6 Gas Conversion	300 MW in 2021	
Combined Cycle			150 MW in 2028	

Table 10: Overview of Alternative Resource Plans

Resource	CCCG1	Plan DCCG1	Plan ECCG1	Plan FCCG1
DSM	MEEIA DR Only	Aggressive DSM	Very Aggressive DSM	Stipulation DSM
Solar	10 MW in 2018	10 MW in 2018	10 MW in 2018	10 MW in 2018
Solar	6 MW in 2021	6 MW in 2021	6 MW in 2021	6 MW in 2021
Solar	3 MW in 2023	3 MW in 2023	3 MW in 2023	3 MW in 2023
Wind	150 MW in 2019	150 MW in 2019	150 MW in 2019	150 MW in 2019
Wind	100 MW in 2021	100 MW in 2021	100 MW in 2021	100 MW in 2021
Wind	100 MW in 2024	100 MW in 2024	100 MW in 2024	100 MW in 2024
Coal				
Coal				
Nuclear				
Nuclear				
Coal Retire	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)	99 MW in 2017 (S 1-2)
Combustion Turbine	231 MW in 2014	154 MW in 2030		
Combustion Turbine	154 MW in 2018			
Combustion Turbine	154 MW in 2023			
Combustion Turbine	154 MW in 2027			
Combustion Turbine	154 MW in 2030			
Combined Cycle				
Combined Cycle				

Resource	Plan XCCG1
DSM	Persistence DSM
Solar	10 MW in 2018
Solar	6 MW in 2021
Solar	3 MW in 2023
Wind	150 MW in 2019
Wind	100 MW in 2021
Wind	100 MW in 2024
Coal	
Coal	
Nuclear	
Nuclear	
Coal Retire	99 MW in 2017 (S 1-2)
Combustion Turbine	231 MW in 2014
Combustion Turbine	154 MW in 2017
Combustion Turbine	154 MW in 2022
Combustion Turbine	154 MW in 2026
Combustion Turbine	154 MW in 2029
Combined Cycle	
Combined Cycle	

Each plan is detailed in year-by-year charts in Volume 6, Section 4.

4.2 SELECTION OF PREFERRED RESOURCE PLAN

The Preferred Plan that has been selected for GMO is shown in Table 11 below:

Table 11: GMO Preferred Resource Plan

Year	CC's (MW)	Solar (MW)	Wind (MW)	MEEIA DSM (MW)	Retire (MW)	Existing Capacity (MW)
2012	-			57		2,210
2013	-			76		2,218
2014	-			95		2,143
2015	-			112		2,143
2016	-			131		2,143
2017	-			149	99	2,078
2018	-	10		155		2,078
2019	-		150	172		2,078
2020	-			189		2,078
2021	300	6	100	206		2,078
2022	-			222		2,078
2023	-	3		239		2,078
2024	-		100	255		2,078
2025	-			274		2,078
2026	-			291		2,078
2027	-			309		2,078
2028	150			326		2,078
2029	-			344		2,078
2030	-			363		2,078
2031	-			381		2,078

Based upon current Missouri RPS rule requirements, the Preferred Plan includes 19 MW of solar additions and 350 MW of wind additions over the twenty-year planning period. It should be noted that solar and wind additions could be obtained from power purchase agreements (PPA), purchasing of renewable energy credits (RECs), or utility ownership. "MEEIA DSM" consists of a suite of twelve Energy Efficiency and two Demand Response programs that GMO considers the capacity and energy estimated from these programs comprise realistically achievable levels. The retirement of 99 MW in 2017 represents Sibley Units 1 and 2. The environmental drivers that contributed to the Sibley Unit 1 and 2 retirements included Mercury and Air Toxics Standards Rule, Ozone National Ambient Air Quality Standards (NAAQS), PM NAAQS, Clean Water Act

Section 316(a) and (b), Effluent Guidelines, and Coal Combustion Residuals Rule. These rules are currently not in effect and will be monitored by GMO prior to the projected retirement year 2017 to determine if the current decision to retire Sibley Units 1 and 2 continues to be prudent.

The Preferred Plan was not the lowest cost plan from a Net Present Value of Revenue Requirement (NPVRR) perspective. There are Alternative Resource Plans that showed a lower NPVRR. These plans include DSM levels which were developed to satisfy the requirements of Special Contemporary Issue c. “a very aggressive energy efficiency resource standard” and Special Contemporary Issue h. “Analyze and document aggressive DSM portfolios without constraints” stated in Order EO-2012-0042. These levels of DSM are not considered to be realistically achievable. The plan producing the next lowest expected value of NPVRR was chosen as the Preferred Plan. It should be noted that this plan is based upon resource planning in tandem with Kansas City Power & Light Company (KCP&L) and provides benefit to Missouri retail customers by planning on a combined company basis.

The Preferred Plan also meets the fundamental planning objectives as required by Rule 22.010(2) to provide the public with energy services that are safe, reliable, and efficient, at just and reasonable rates, in compliance with all legal mandates, and in a manner that serves the public interest and is consistent with state energy and environmental policies.

The Forecast of Capacity Balance worksheet associated with the Preferred Plan selected for GMO is shown in Table 12 below:

Table 12: GMO Forecast of Capacity Balance - Preferred Plan **Highly Confidential**

Name of Utility	KCP&L Greater Missouri Operations																			
Year of Electric Utility Resource Planning Filing	1-Apr-12																			
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
A. System Generating Capacity (GMO share)																				
Base Capacity																				
Iatan I	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127	127
Iatan II	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159	159
Jeffrey Energy Center 1	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Jeffrey Energy Center 2	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Jeffrey Energy Center 3	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
Lake Road 4	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Sibley 1	48	48	48	48	48															
Sibley 2	51	51	51	51	51															
Sibley 3	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364	364
Total Base Capacity	1,021	1,021	1,021	1,021	1,021	923	923	923	923	923	923	923	923	923	923	923	923	923	923	923
Intermediate Capacity																				
Combined Cycle Additions										300	300	300	300	300	300	300	450	450	450	450
Total Intermediate Capacity	-	-	-	-	-	-	-	-	-	300	300	300	300	300	300	300	450	450	450	450
Peaking Capacity																				
Greenwood 1	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
Greenwood 2	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63
Greenwood 3	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
Greenwood 4	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
KCI 1	-	-	-	-	-	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
KCI 2	-	-	-	-	-	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
Lake Road 1	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
Lake Road 2	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
Lake Road 3	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Lake Road 5	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65
Lake Road 6	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Lake Road 7	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
Nevada	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Ralph Green 3	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71
South Harper 1	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106
South Harper 2	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106	106
South Harper 3	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105
Cross Roads Unit 1	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Cross Roads Unit 2	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73
Cross Roads Unit 3	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
Cross Roads Unit 4	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74
SJLP Landfill Gas Project	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Total Peaking Capacity	1,124	1,124	1,124	1,124	1,124	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158	1,158
Intermittent Capacity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent Accredited Intermittent Capacity																				
Total Accredited Intermittent Capacity	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wind Additions								12	12	20	20	20	28	28	28	28	28	28	28	28
Solar Additions							10	10	10	16	16	19	19	19	19	19	19	19	19	19
Total Intermittent Capacity with Additions	0.0	0.0	0.0	0.0	0.0	0.0	10.0	22.0	22.0	36.0	36.0	39.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0
Total Generation Capacity	2,145	2,145	2,145	2,145	2,145	2,081	2,091	2,103	2,103	2,417	2,417	2,420	2,428	2,428	2,428	2,428	2,578	2,578	2,578	2,578

[redacted]

HC

SECTION 5: CRITICAL UNCERTAIN FACTORS

4. Identification of critical uncertain factors affecting the preferred resource plan;

The Company has selected its Preferred Plan by assuming combined planning for both KCP&L and GMO. This assumption has changed the risk impact when comparing stand-alone company alternatives. As such some critical uncertain factors do not remain critical to the decision of the joined company.

In the combined company analysis the preferred plan, AJDC2 and one other plan, AGDC2, proved to be the lowest cost plan under different risk scenarios. The values of these two plans NPVRR under each of these risks are detailed in the following table.

Table 13: Alternative Plans for Each Uncertain Factor

NPVRR($MM)	High Load	High NG	High CO2	EV	Low CO2	Low NG	Low Load
AGDC2	33,436.3	32,469.6	35,429.8	33,068.4	31,273.4	33,091.1	32,196.9
AJDC2	33,443.5	32,543.4	35,374.8	33,064.5	31,310.4	33,022.2	32,193.3

With combined company planning, the remaining uncertain factors which may cause the company to modify the preferred plan are limited to low CO_2, high load growth and high natural gas prices. Details of the calculations for range of uncertain factors are given in detail in Volume 7, Section 2.

For GMO, the Preferred Plan and the Contingency Plan are the allocated components of the lowest-cost and contingency plans from the combined company study. GMO Preferred Plan ACCG9 is the GMO allocated portion of combined company plan AJDC2. GMO Contingency Plan ACCG8 is the GMO allocated portion of combined company plan AGDC2. Complete descriptions of the GMO plans are located in the response to Rule 240-22.060(3) in Volume 6 of this filing. Complete descriptions of the combined company plans are located in the response to Rule 240-22.060(3)8 in Volume 6 of this filing.

SECTION 6: PERFORMANCE MEASURES

5. For existing legal mandates and approved cost recovery mechanisms, the following performance measures of the preferred resource plan for each year of the planning horizon:

A. Estimated annual revenue requirement;

B. Estimated level of average retail rates and percentage of change from the prior year; and

C. Estimated company financial ratios;

Data for the Preferred Plan is provided in the table below. This information is also provided in the Company response to Rule 240-22.060(4)(C)1. in Volume 6.

Table 14: Financial Performance - Preferred Plan

Year	Revenue Requirement ($MM)	Revenue Requirement ($MM) No DSM	Levelized Annual Rates ($/kw-hr)	Levelized Annual Rates ($/kw-hr) No DSM	Rate Increase	Rate Increase No DSM	Times Interest Earned	Times Interest Earned No DSM	Debt to Capital	Debt to Capital No DSM	Internal Cash to Construction Expense	Internal Cash to Construction Expense No DSM
2012	823	812	0.09	0.09	0.00%	0.00%	2.59	2.60	49.46	49.46	0.21	0.16
2013	853	845	0.10	0.10	2.60%	3.02%	2.75	2.76	49.73	49.73	0.54	0.50
2014	910	904	0.10	0.10	5.36%	5.66%	2.01	2.02	50.00	50.00	0.31	0.28
2015	915	912	0.10	0.10	-0.42%	-0.09%	2.12	2.13	50.00	50.00	0.19	0.18
2016	933	932	0.10	0.10	0.63%	0.85%	2.07	2.08	50.00	50.00	0.12	0.11
2017	1,027	1,028	0.11	0.11	9.24%	9.46%	2.29	2.30	50.00	50.00	0.14	0.14
2018	1,170	1,172	0.13	0.13	12.56%	12.64%	2.43	2.44	50.00	50.00	0.45	0.45
2019	1,183	1,185	0.13	0.13	-0.19%	-0.19%	2.32	2.33	50.00	50.00	0.37	0.37
2020	1,238	1,240	0.13	0.13	3.04%	3.03%	2.27	2.28	50.00	50.00	0.27	0.27
2021	1,364	1,366	0.14	0.14	9.15%	9.14%	2.58	2.59	50.00	50.00	0.70	0.70
2022	1,415	1,417	0.15	0.15	2.43%	2.43%	2.48	2.48	50.00	50.00	0.70	0.70
2023	1,492	1,494	0.15	0.15	4.15%	4.14%	2.65	2.66	50.00	50.00	1.46	1.46
2024	1,514	1,516	0.15	0.15	-0.19%	-0.19%	3.07	3.07	50.00	50.00	1.77	1.77
2025	1,529	1,531	0.15	0.15	-0.14%	-0.15%	2.76	2.77	50.00	50.00	1.15	1.14
2026	1,569	1,571	0.15	0.15	1.08%	1.07%	2.71	2.72	50.00	50.00	0.98	0.98
2027	1,611	1,614	0.15	0.15	0.99%	1.05%	2.67	2.68	50.00	50.00	1.02	1.01
2028	1,689	1,691	0.16	0.16	2.85%	2.78%	2.80	2.81	50.00	50.00	1.26	1.25
2029	1,744	1,746	0.16	0.16	1.78%	1.78%	2.71	2.72	50.00	50.00	1.45	1.45
2030	1,797	1,800	0.16	0.16	1.23%	1.28%	2.69	2.70	50.00	50.00	1.46	1.45
2031	1,849	1,852	0.16	0.17	1.14%	1.13%	2.67	2.68	50.00	50.00	1.48	1.47

SECTION 7: COMPANY FINANCIAL RATIOS

6. If the estimated company financial ratios in subparagraph (2)(E)5.C. of this rule are below investment grade in any year of the planning horizon, a description of any changes in legal mandates and cost recovery mechanisms necessary for the utility to maintain an investment grade credit rating in each year of the planning horizon and the resulting performance measures of the preferred resource plan;

The Company calculated performance measures for all studied alternative plans including the Preferred Plan. The expected values of alternative plan performance ratios do not materially change below current conditions. The expectations would be that the investment rating of the company is not at risk from the choice of any particular alternative resource plan.

SECTION 8: RESOURCE ACQUISITION INITIATIVES

7. Actions and initiatives to implement the resource acquisition strategy prior to the next triennial compliance filing; and

GMO is currently in the initial stage of engaging an engineering firm to develop several supply-side related studies. This suite of studies is referred to as the "Mega Study". GMO has engaged Sega, Inc. to develop the scope of the Mega Study and to evaluate the responses that will be received from the Request For Proposal.

The draft timeline for the Mega Study initiative is shown in Table 15 below:

Table 15: Mega Study Major Milestone Schedule

Milestone Description	Duration (work days)	Start Date	Completion Date	Total Duration (work days)	Status
Statement of Work Issued - Notice to Proceed	1	4/2/2012	4/2/2012	1	Complete
Sega submits draft RFP/Scope	15	4/2/2012	4/20/2012	16	In process
Draft RFP Review and Comments to Sega	5	4/23/2012	4/27/2012	21	In process
Sega Revises and Submits Final RFP	5	4/30/2012	5/4/2012	26	In process
Request For Proposal Issued to Bidders	5	5/7/2012	5/11/2012	31	In process
Bidders Prepare Proposals	18	5/14/2012	6/6/2012	49	In process
Mandatory Pre-Bid Conference for All Bidders	1	5/21/2012	5/21/2012	50	In process
Proposals Due	0	6/6/2012	6/6/2012	50	In process
Evaluation of Proposals	5	6/7/2012	6/13/2012	55	In process
Project Awarded	5	6/14/2012	6/20/2012	60	In process
Commence MEGA Study	0	6/20/2012	6/20/2012	60	In process
Perform Study & Compile Draft Report	75	6/21/2012	10/3/2012	135	In process
Consultant Submits Draft Report	0	10/3/2012	10/3/2012	135	In process
Review and Comment on Draft Report	10	10/4/2012	10/17/2012	145	In process
Finalize Report	10	10/18/2012	10/31/2012	155	In process
Submit FINAL Report	0	10/31/2012	10/31/2012	155	In process

The draft scope of the Mega Study is shown in Table 16 and Table 17 below:

Table 16: Mega Study - Sibley Station ** Highly Confidential **

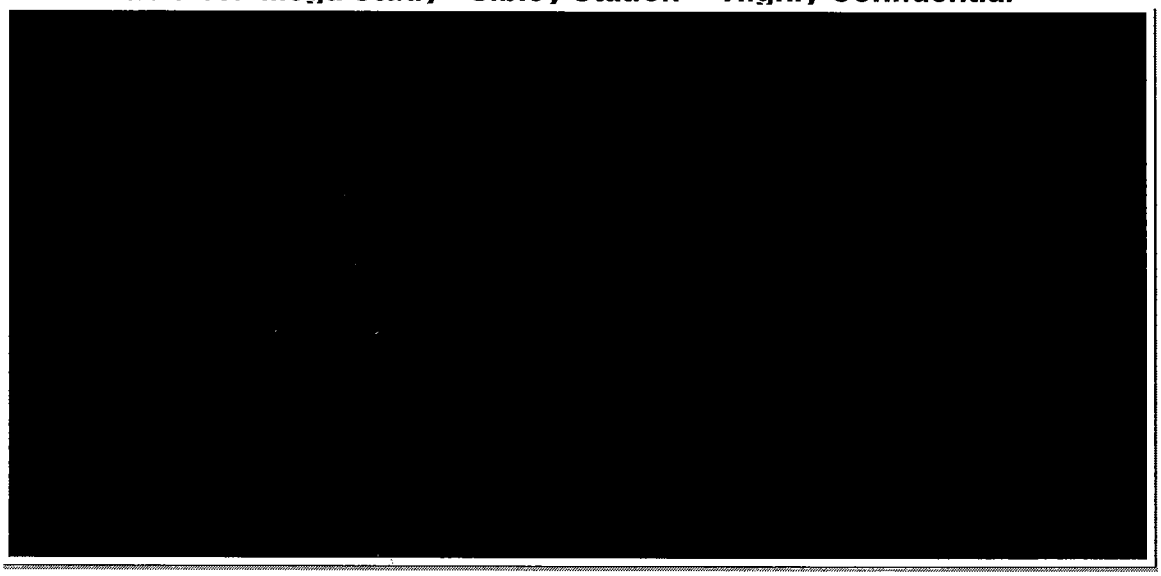
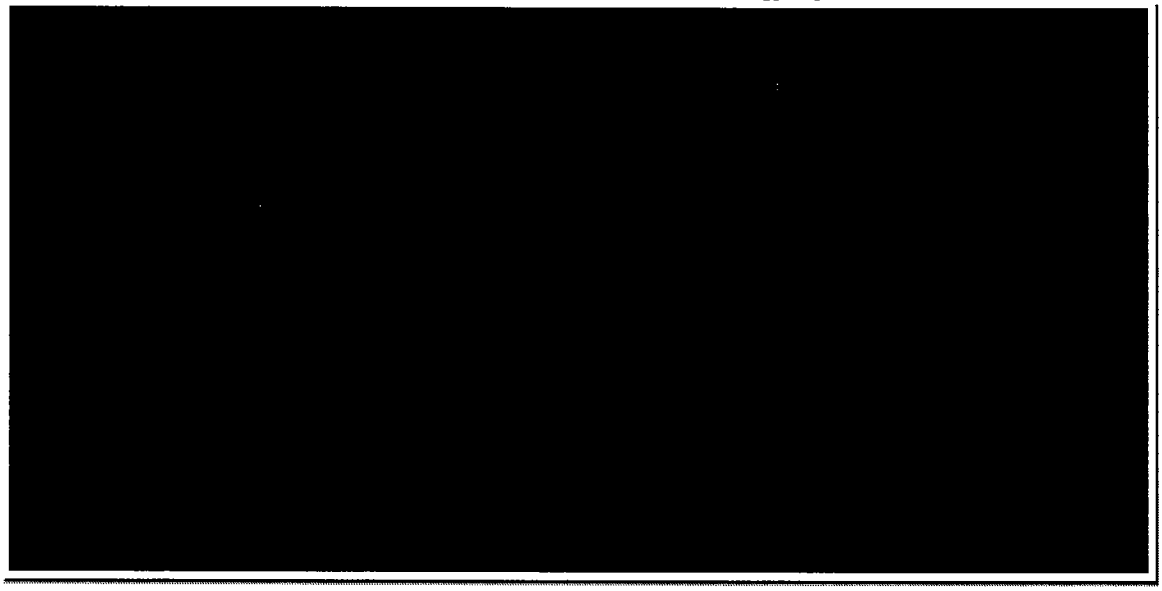


Table 17: Mega Study – Lake Road 4/6 ** Highly Confidential **



HC

SECTION 9: MAJOR RESEARCH PROJECTS

8. A description of the major research projects and programs the utility will continue or commence during the implementation period;

9.1 DEMAND-SIDE MANAGEMENT PROJECTS

Major DSM research projects are identified in Table 18 the table below

Table 18: DSM Research Projects

Major Research Projects			
	PROJECT	Start	Results
1	DSM Market Potential Study	January 16, 2012	January 15, 2013
2	Green Impact Zone SmartGrid Demonstration	2010	2014
3	EPRI / UMKC LED Evaluation	March 29, 2010	Summer 2012

9.1.1 DEMAND-SIDE MANAGEMENT MARKET POTENTIAL STUDY

GMO has engaged Navigant Consulting to conduct a Demand-Side Management Potential study in the utility's control area. The scope of work and project schedule are provided in Appendix 5A Navigant SOW Signed 01162012 HC.pdf. The project schedule is as follows

Table 19: DSM Potential Study Schedule

DSM Potential Study Schedule Estimate		
Milestone	Estimated Completion Date	Status as of June 20, 2011
RFP Available	May 9, 2011	Complete
Intent to Respond & Signed Non-Disclosure Agreement Due	May 12, 2011	Complete
Mandatory Pre-bid Meeting (via Conference Call)	May 16, 2011	Complete
Bidder Questions Due – 12:00 Noon CDT	May 20, 2011	Complete
Final Answers to Questions Provided by KCP&L – Close of Business	May 27, 2011	Complete
Proposal Responses Due – 12:00 Noon CST	June 10, 2011	Complete
KCP&L Bid Review Complete	June 24, 2011	Complete
Short List Onsite Presentations	June 27, 2011 – July 8, 2011	Complete
Signed Contract	January 16, 2012	Complete
Project Initiation Meeting	January 30, 2012	Complete
Market Characterization, Historical Load Analysis, Sample Design, Surveys	Feb 16, 2011 – Sep 16, 2012	Pending
ID and Characterize Potential Demand Side Resources/Measures	Jun 18, 2012 - Sept 16, 2012	Pending
Estimate Economic and Technical Potential	October 15, 2012	Pending
Develop Potential Demand Side Programs	November 15, 2012	Pending
Finalize Project Report	January 15, 2013	Pending

9.1.2 SMARTGRID DEMONSTRATION PROJECT

GMO SmartGrid demonstration project complies with the Department of Energy's (DOE's) funding guidelines and combines commercial innovation with a unique approach to smart grid development and demonstration:

1. SmartGrid creates a complete, end-to-end smart grid — from smart generation to smart end-use — that will deliver improved performance focused on a major substation in an urban location.
2. SmartGrid introduces new technologies, applications, protocols, communications and business models that will be evaluated, demonstrated and refined to achieve improved operations, increase energy efficiency, reduce energy delivery costs and improve environmental performance.
3. SmartGrid incorporates a best-in-class approach to technology integration, application development and partnership collaboration, allowing KCP&L to advance the progression of complete smart grid solutions — with interoperability standards — rather than singular, packaged applications.
4. KCP&L's demonstration project will provide the critical energy infrastructure required to support a targeted urban revitalization effort in Kansas City's Green Impact Zone.

It should be noted that the SmartGrid project is located in the "green Impact Zone, which is in the KCP&L service territory. Results of this project could potentially benefit GMO customers in the future as well.

9.1.3 LED LIGHTING COLLABORATION PROJECT WITH EPRI

GMO is collaborating with The Electric Power Research Institute (EPRI), as a host utility, to test and evaluate the potential of currently available LED lighting. The issues that need to be addressed are system compatibility, technology performance, validating industry performance claims and efficacy issues. In particular, assuming the lamps perform reliably, the efficacy of the lamps will

determine the total energy savings possible. LED lamps have a higher color rendering index and this has the effect of increasing the amount of perceived light. Identifying the minimum amount of light output necessary to replace existing light sources will maximize the possible energy savings. To this end, the EPRI collaboration will take periodic readings of scotopic and photopic light measurements at test sites. If you match lumens, LED luminaries can't measure up to HPS lamps. However, if you measure the efficacy, using scotopic readings, LED fixtures can replace HPS fixtures with fewer lumens, therefore, fewer watts.

The EPRI LEDSAL collaboration project involves a test site, where HID lighting is being replaced with LED luminaries. A KCP&L participant is involved in the quarterly measurement process, using EPRI's Rover Light Measurement Tool, to take readings of the pre installation HID lighting, the post installation LED lighting, and quarterly readings, through the end of the project. In addition to testing the efficacy of the LED lighting, the quarterly observations will provide information about degradation, spectrum shift, and reliability and maintenance issues. A significant part of the savings from LED lighting comes from the reduced need for maintenance and monitoring.
Additional information on the GMO-EPRI collaboration can be found in Appendix 5E EPRI EE Demonstration-T.Geist-For Electronic Distribution.pdf"