KANSAS CITY POWER & LIGHT COMPANY (KCP&L)

INTEGRATED RESOURCE PLAN

2014 ANNUAL UPDATE

MARCH, 2014

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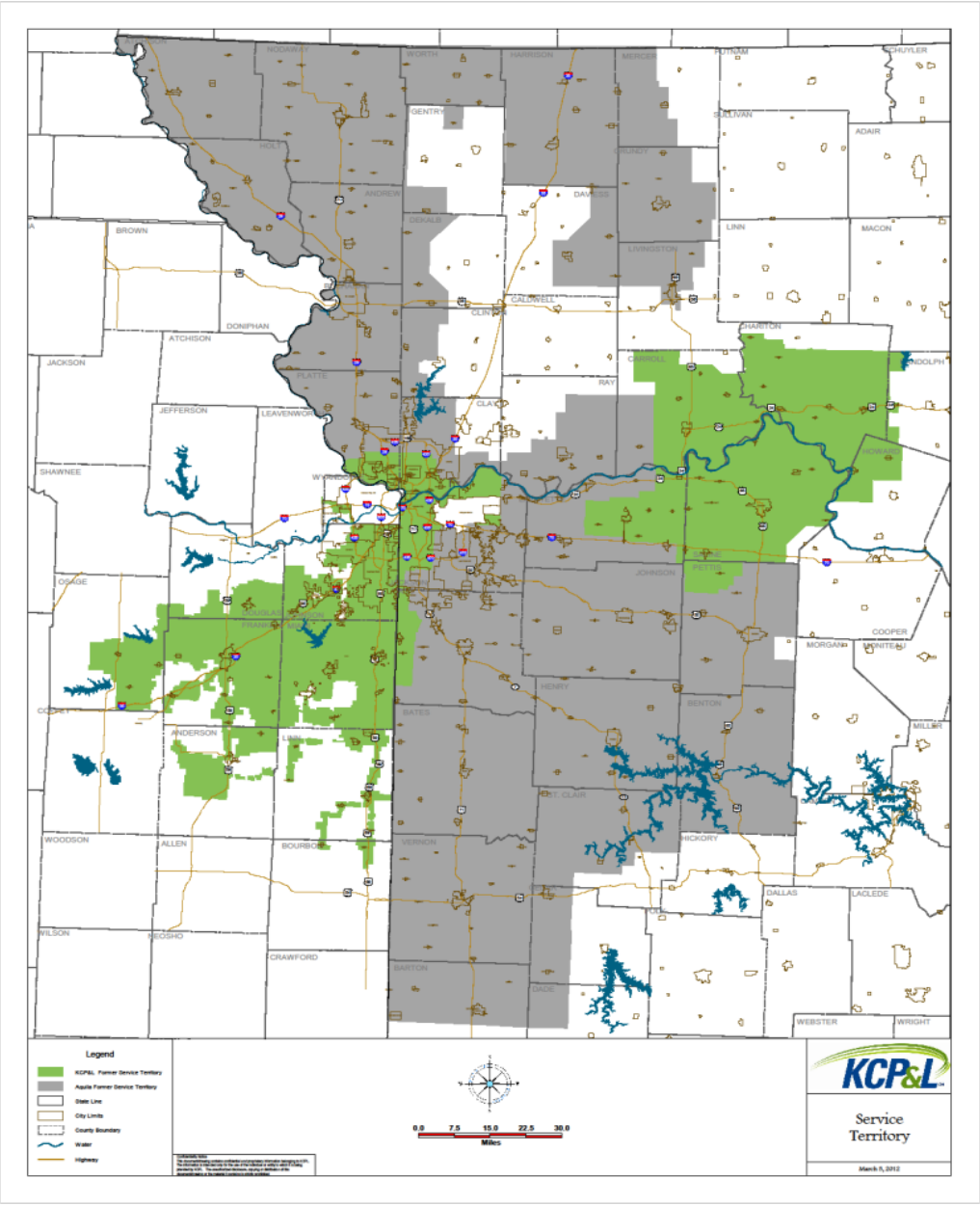
SECTION 1: EXECUTIVE SUMMARY

1.1 UTILITY INTRODUCTION

KCP&L is an integrated, mid-sized electric utility serving the metropolitan region surrounding the Kansas City, Missouri metropolitan area including customers in Kansas and Missouri. A map of the KCP&L service territory is provided in Figure 1 below:

Figure 1: KCP&L Service Territory



KCP&L 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 2014.

Table 1: KCP&L Customers, NSI and Peak Demand

State	Number of Retail Customers	Net System Input (MWh)	Projected Net Peak Demand (MW)
Missouri	272,348	8,702,025	1,772
Kansas	246,965	6,745,457	1,521
Total	519,313	15,447,482	3,293

KCP&L owns and operates a diverse generating portfolio and has Power Purchase Agreements (PPA) in place to meet customer energy requirements. The most recent resource addition was from KCP&L's issuance of a Request for Proposals ("RFP") in July, 2013 to evaluate wind resource offerings. The wind facility KCP&L ultimately obtained was a PPA for a 200 MW facility located in the State of Kansas. The PPA was executed on November 18, 2013 and has an expected Commercial Operating Date ("COD") of on or before December 31, 2015. This facility will be used to fulfill a portion of KCP&L's Missouri and Kansas Renewable Energy requirements. Table 2, Figure 2, and Figure 3 reflect KCP&L's generation assets including wind PPAs currently in place.

Table 2: KCP&L Capacity and Energy by Resource Type

Resource Type	Capacity (MW)	% of Total Capacity	Estimated Energy (MWh)	% of Annual Energy
Coal	2,711	54%	16,352,423	72%
Nuclear	547	11%	4,091,099	18%
Oil	375	7%	0	0%
Nat. Gas	791	16%	164,459	1%
Wind	580*	11%	2,135,861	9%
Hydro	62	1%	110,886	0.5%
Solar	0.1	0.003%	122	0.001%
Total	5,066	100%	22,854,850	100%
* Nameplate Capacity				

Figure 2: KCP&L Capacity by Resource Type

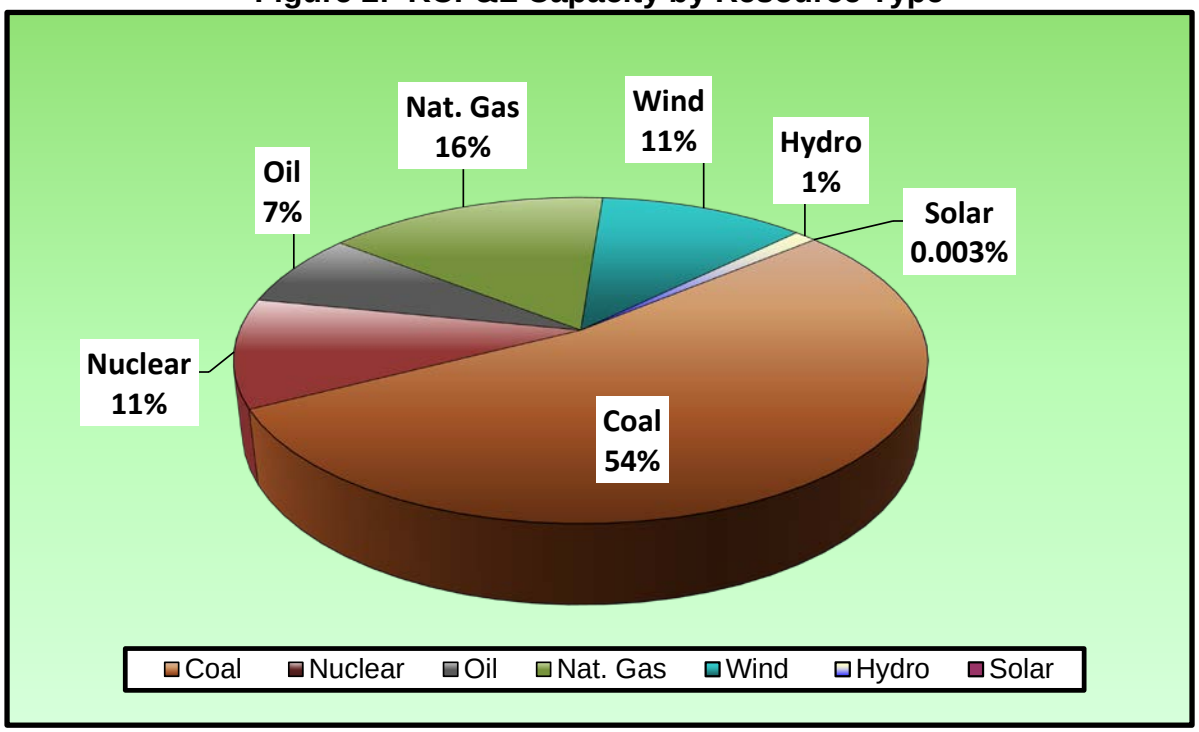
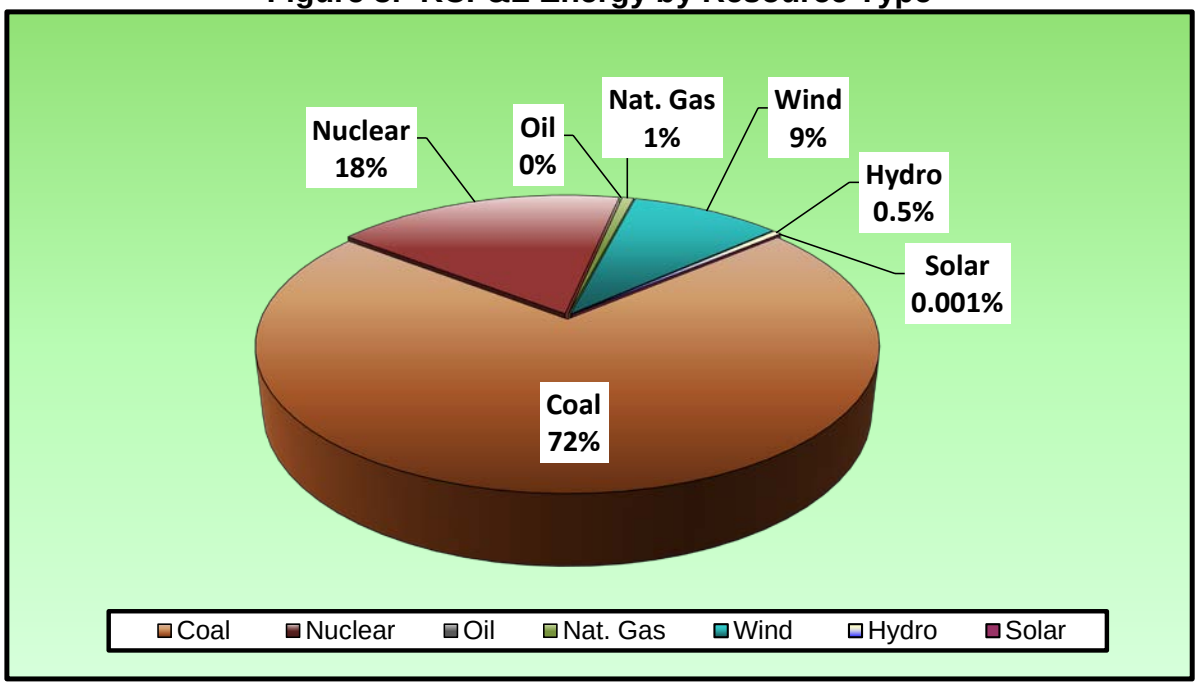


Figure 3: KCP&L Energy by Resource Type



1.2 CHANGES FROM THE REVISED 2013 ANNUAL UPDATE

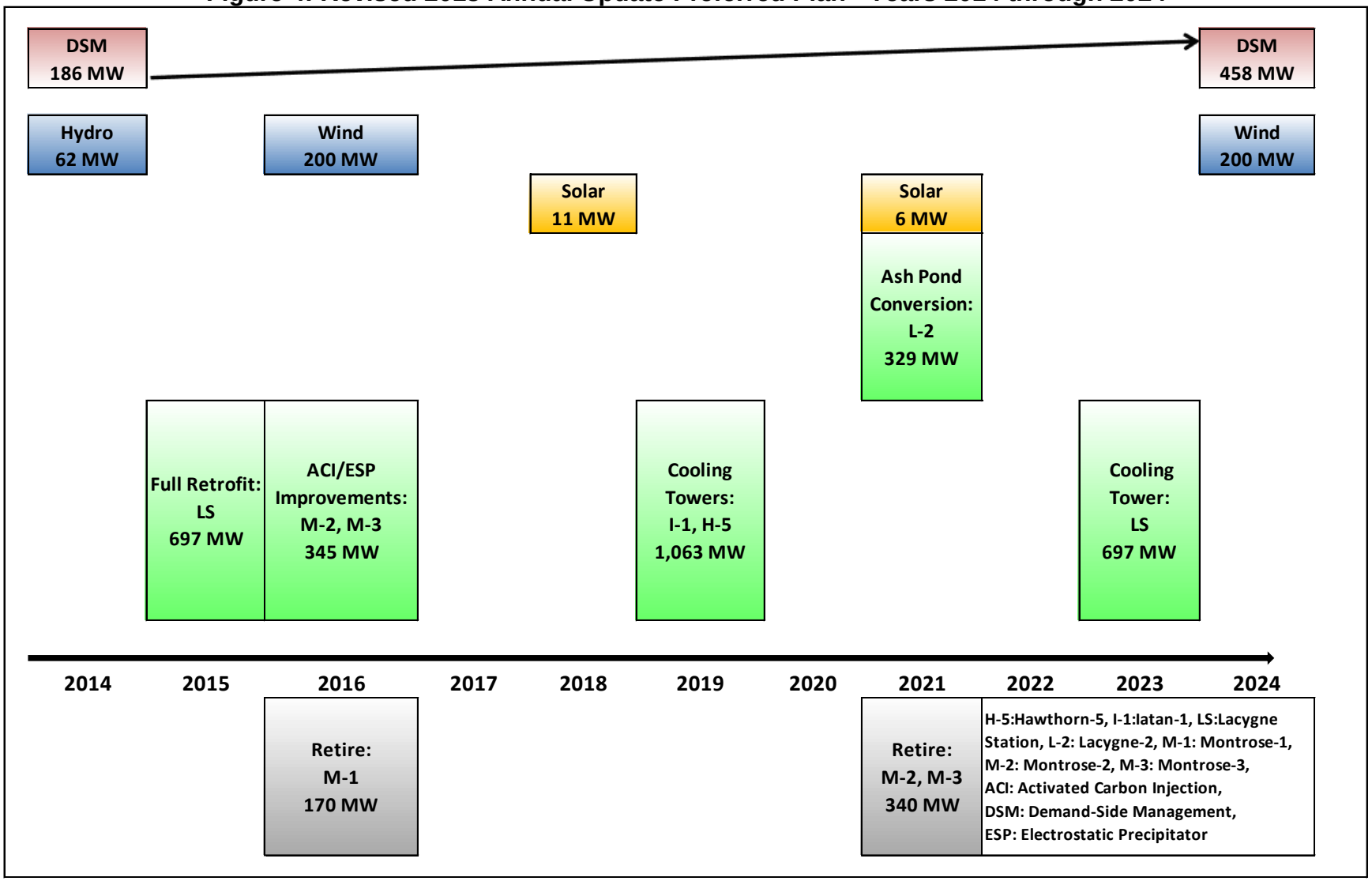
Since the filing of the Revised 2013 Annual Update, changing conditions have contributed to the Preferred Plan identified in 2013 Revised Annual Update as being obsolete. The changing conditions, or major drivers, that have contributed to KCP&L's need to develop new Alternative Resource Plans and therefore selection of a new Preferred Plan include:

- Proposed and Potential Environmental Regulations
- Load Forecast Projections
- Demand-Side Management Program levels

1.3 REVISED 2013 ANNUAL UPDATE PREFERRED PLAN

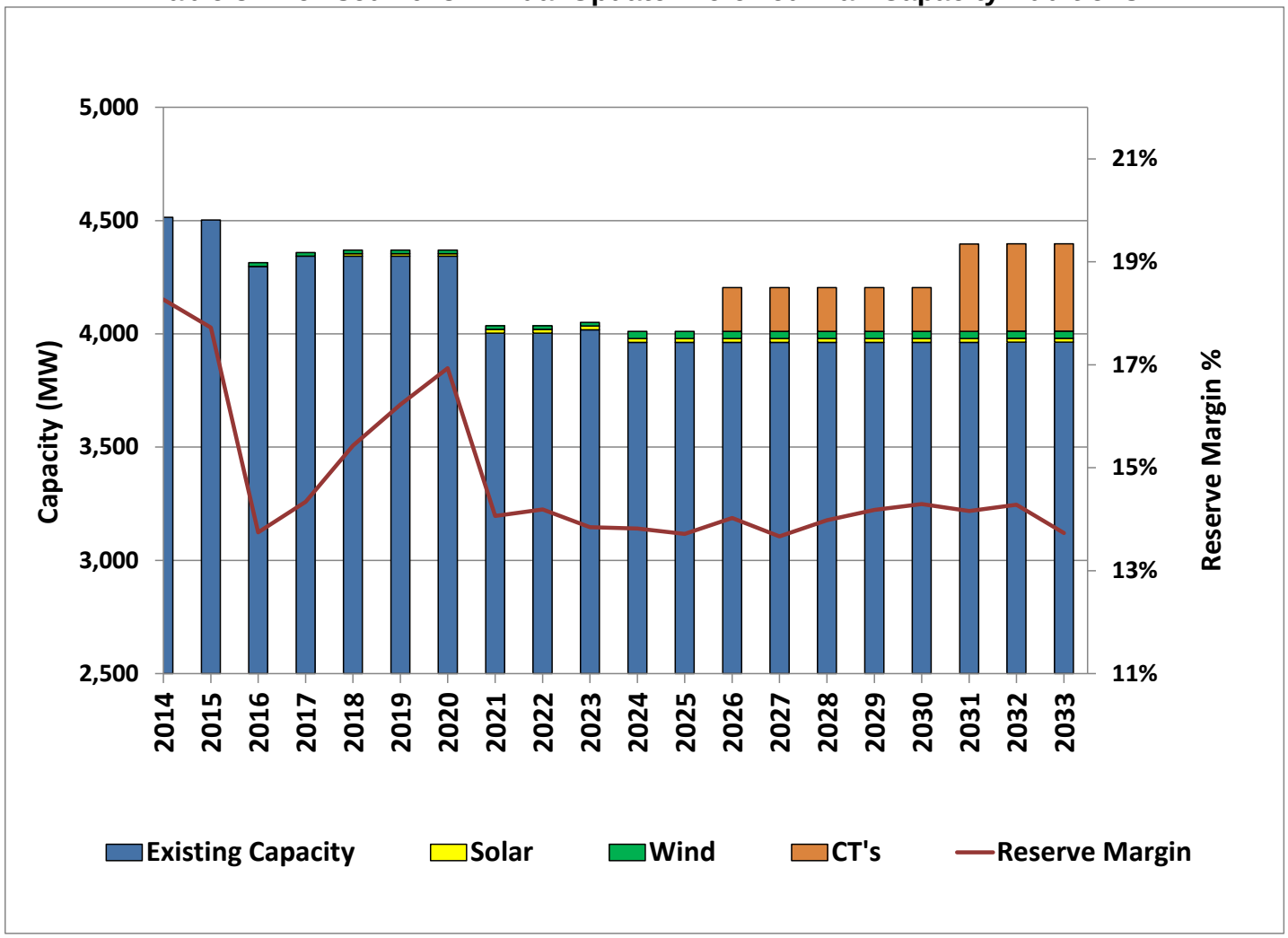
The Revised 2013 Annual Update resulted in the Preferred Plan for KCP&L being comprised of the following components for years 2014 – 2024 shown in Figure 4 below. Additionally, in the years 2024-2031, there were 193 MW combustion turbine additions in years 2026 and 2031. Also, the Demand-Side Management programs comprised 453 MW of capacity reduction by the year 2033.

Figure 4: Revised 2013 Annual Update Preferred Plan - Years 2014 through 2024



Existing and new capacity additions for the Revised 2013 Annual Update Preferred Plan are shown in Table 3 below:

Table 3: Revised 2013 Annual Update Preferred Plan Capacity Additions



The Revised 2013 Annual Update Preferred Plan is shown in Table 4 below:

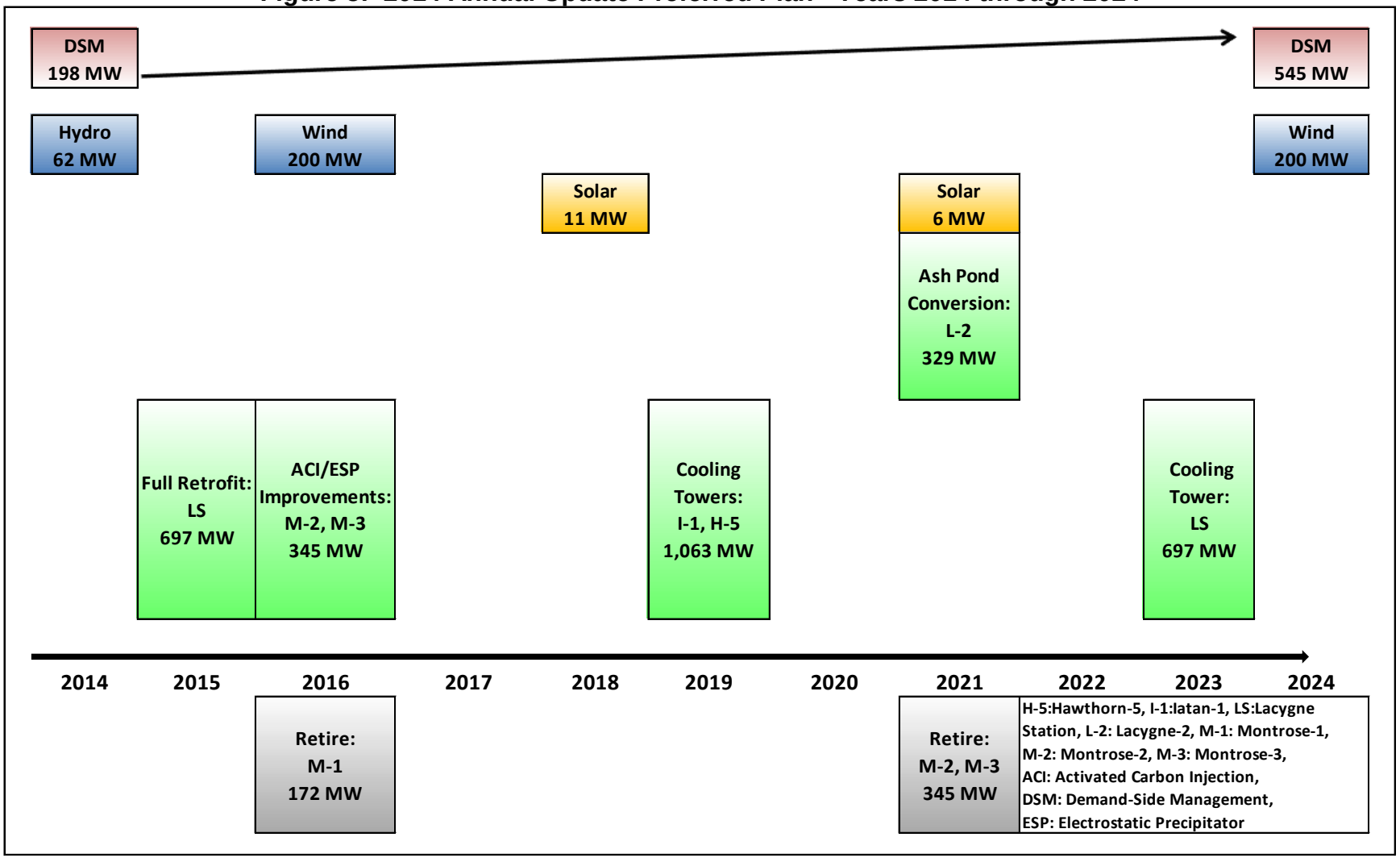
Table 4: Revised 2013 Annual Update

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM (MW)	Retire (MW)	Existing Capacity (MW)
2013	-			128		4,393
2014	-			186		4,514
2015	-			193		4,503
2016	-		200	207	170	4,298
2017	-			239		4,343
2018	-	11		280		4,343
2019	-			320		4,343
2020	-			359		4,343
2021	-	6		391	340	4,003
2022	-			418		4,003
2023	-			441		4,018
2024	-		200	458		3,962
2025	-			463		3,962
2026	193			466		3,962
2027	-			466		3,962
2028	-			465		3,962
2029	-			463		3,962
2030	-			460		3,962
2031	193			458		3,962
2032	-			455		3,963
2033	-			453		3,963

1.4 2014 ANNUAL UPDATE PREFERRED PLAN

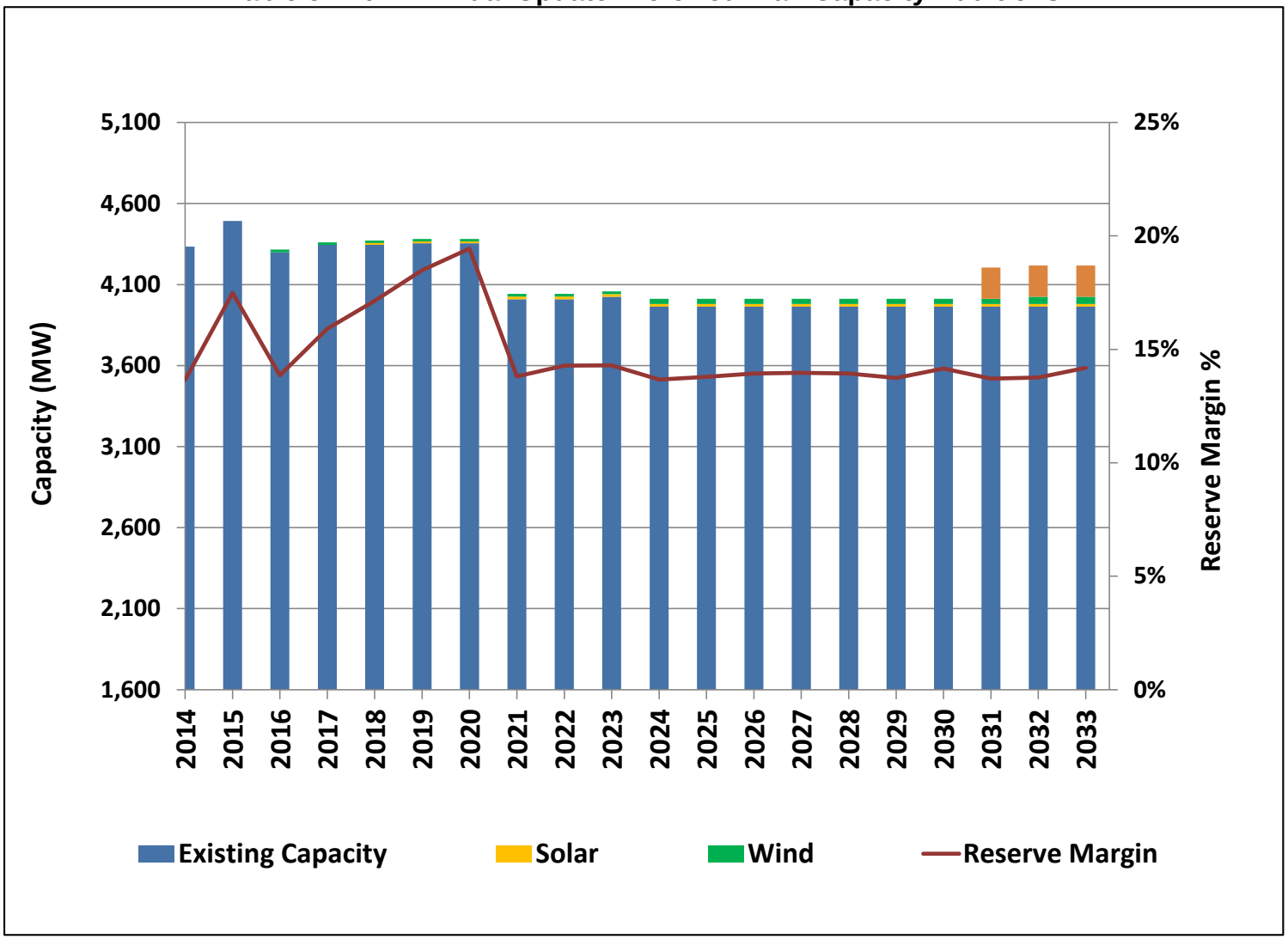
The 2014 Annual Update resulted in the Preferred Plan being comprised of the following components for years 2014 – 2024 shown in Figure 5 below. In the years 2025 through 2033, there is a 193 MW combustion turbine addition in year 2031 and a 150 MW wind addition in year 2032. Also, the Demand-Side Management programs comprised 557 MW of capacity reduction by the year 2033.

Figure 5: 2014 Annual Update Preferred Plan - Years 2014 through 2024



Existing and new capacity additions for the 2014 Annual Update Preferred Plan are shown in Table 5 below:

Table 5: 2014 Annual Update Preferred Plan Capacity Additions



The 2014 Annual Update Preferred Plan for the 20-year planning period is shown in Table 6 below:

Table 6: 2014 Annual Update Preferred Plan

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM (MW)	Retire (MW)	Existing Capacity (MW)
2014	-			198		4,333
2015	-			198		4,492
2016	-		200	256	172	4,299
2017	-			290		4,344
2018	-	11		336		4,344
2019	-			381		4,354
2020	-			422		4,354
2021	-	6		460	345	4,009
2022	-			494		4,009
2023	-			522		4,024
2024	-		200	545		3,963
2025	-			549		3,963
2026	-			556		3,963
2027	-			560		3,963
2028	-			563		3,963
2029	-			563		3,963
2030	-			562		3,963
2031	193			561		3,963
2032	-		150	559		3,963
2033	-			557		3,963

Based upon current RPS rule requirements, the Preferred Plan includes 17 MW of solar additions. The next wind resource addition beyond the 2016 200 MW addition already under contract is in 2024. It should be noted that renewable resource additions could be obtained from power purchase agreements (PPA), purchasing of renewable energy credits (RECs), or utility ownership. It is anticipated that a large portion of the solar requirement will be met with solar RECs obtained from KCP&L retail customers that have received rebates for solar facility additions. A Combustion turbine (CT) resource addition is also included in 2031.

1.4.1 DEMAND-SIDE UPDATE

The 2014 Annual Update utilized the results of the final version of Navigant Demand-Side Management Potential Study published in August, 2013. DSM alternatives were based on the Realistic Achievable Potential (RAP) and the Maximum Achievable Potential (MAP), which were identified in the Potential Study. Five DSM alternatives were utilized in Integrated Analysis - MEEIA/RAP, MAP, RAP plus 1/3 of the difference between RAP and MAP, RAP plus 2/3 the difference between RAP and MAP, and approximately half-RAP. The MEEIA/RAP DSM alternative is further outlined in Section 5: of this report.

1.4.2 SUPPLY-SIDE UPDATE

The potential retirements of Montrose Unit 1 in 2016 and Montrose Units 2 and 3 in 2021 is partially attributed to current or proposed environmental regulations including Mercury and Air Toxics Standards Rule (MATS), Ozone National Ambient Air Quality Standards (NAAQS), PM NAAQS, SO_2 NAAQS Clean Water Act Section 316(a) and (b), Effluent Guidelines, and Coal Combustion Product Rule. These rules will be continually monitored by KCP&L prior to the projected retirement years to determine if any adjustment to this Preferred Plan is needed.

SECTION 2: LOAD ANALYSIS AND LOAD FORECASTING UPDATE

2.1 CHANGES FROM THE REVISED 2013 ANNUAL UPDATE FILING

Several inputs to the load forecasting models were updated for this filing.

- The economic forecasts for the KC metro area were updated. In the Revised 2013 Annual Update filing, KCP&L used forecasts produced by Moody's Analytics in September 2012. In this 2014 Annual Update filing, the forecasts were produced in June 2013.

- Billing statistics were updated through June 2013 for this filing. In the Revised 2013 Annual update filing, the statistics were current through August 2012. These statistics include the number of customers, kWh sales and dollars per kWh.

- Forecasts of saturations and appliance use are updated annually by the US DOE. In this filing, KCP&L used the results from DOE's 2013 models. In the Revised 2013 Annual Update filing, KCP&L used results from the 2012 models.

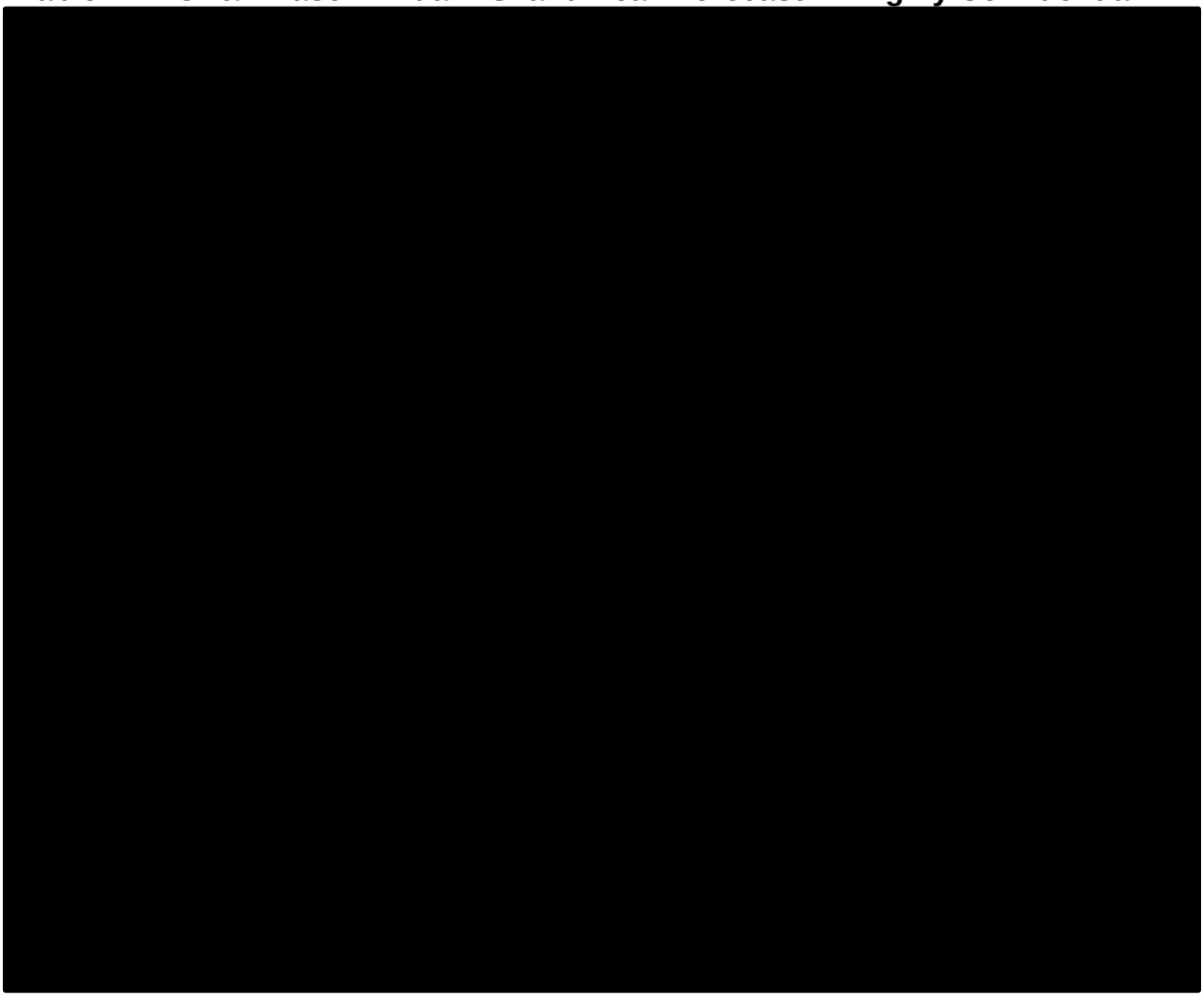
- The appliance saturation survey was updated at the end of 2012/2013. The updated saturations are used to calibrate the DOE appliance saturation data. A total of 5,000 surveys were mailed (50% KCPL-MO and 50% KCPL-KS) resulting in a 30% response rate. In the Revised 2013 IRP update filing, the survey was last updated in 2010.

- Class models were changed to residential, small commercial (small general service commercial), big commercial (medium general service commercial, large general service commercial, and large power commercial), and industrial (small general service industrial, medium general service industrial, large general service industrial, and large power industrial). In the Revised 2013 Annual Update filing the class models where: residential, small general service, medium general service, large general service, and large power for both commercial and industrial classes.

- The Company also updated the price elasticities used in the commercial and industrial models and the elasticity used in the residential model. The elasticities were adjusted to reflect the new class structures. The estimated elasticities were adjusted to increase the R^2 because the new models were different than previous models used to estimate elasticities.

The load forecast is shown in Table 7 below.

Table 7: KCP&L Base Annual NSI and Peak Forecast ** Highly Confidential **



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SECTION 3: SUPPLY-SIDE RESOURCE ANALYSIS UPDATE

3.1 CHANGES FROM THE REVISED 2013 ANNUAL UPDATE

The forecasts for coal, natural gas, fuel oil, SO_2, NO_x, NO_x Seasonal, and CO_2 have been updated for the 2014 Annual Update filing. Note that the methodology used in determining the forecast range has not changed from the Revised 2013 Annual Update filing.

3.1.1 FUEL FORECASTS

The following tables provide the fuel forecasts that were utilized in the Revised 2013 KCP&L Annual Update submittal and the fuel forecasts incorporated in the 2014 Annual Update. The various composite forecasts were updated to incorporate updated individual forecasts. For example, the 2013 forecast incorporated Annual Energy Outlook 2013 while the 2014 forecast incorporates Annual Energy Outlook 2014.

Table 8: Coal Forecasts - 2013 vs. 2014 ** Highly Confidential **

**Table 9: Natural Gas Forecasts - 2013 vs. 2014 ** Highly Confidential **

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Table 10: Fuel Oil Forecasts - 2013 vs. 2014 ** Highly Confidential **

3.1.2 EMISSIONS FORECASTS

The following tables provide the emission forecasts that were utilized in the Revised 2013 Annual Update submittal and the emissions forecasts incorporated in the 2014 Annual Update. It should be noted that the 2013 SO_2 emissions data is based upon an average of the Cross-States Air Pollution Rule (CSAPR) Group 1 and Group 2 SO_2 forecasts. CSAPR has since been vacated by the U.S. Court of Appeals for the District of Columbia. During the revision period of CSAPR, the court ruled to keep in place the Clean Air Interstate Rule (CAIR).

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Table 11: SO_2 Forecasts - 2013 vs. 2014 ** Highly Confidential **

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Table 12: NO_x Annual Forecasts - 2013 vs. 2014 ** Highly Confidential **

Table 13: NO_x Seasonal Forecasts - 2013 vs. 2014 ** Highly Confidential **

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Table 14: CO_2 Forecasts - 2013 vs. 2014 ** Highly Confidential **

The following table indicates the vendors that provided the fuel and emission forecasts reflected in the above charts.

Table 15: Fuel and Emission Forecast Sources

Forecast Source	Coal	Natural Gas	Fuel Oil	SO_2	NO_x	CO_2
CERA/Global Insight		x	x	x		x
EIA	x	x	x			
PIRA		x	x	x	x	x
Energy Ventures Analysis	x	x	x	x	x	x
JD Energy	x			x	x	x
Synapse						x
SNL Financial	x					
Hanou Energy Consulting	x					

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3.1.3 SUPPLY SIDE TECHNOLOGY CANDIDATE RESOURCE OPTIONS

This section provides the updated supply-side technology candidates included in the integrated resource analysis in the 2014 Annual Update submittal. All of the technologies included in the Revised 2013 Annual Update submittal were also included in the 2014 Annual Update. The cost and operating data for these technologies was updated using the most recent available market sources or the Electric Power Research Institute Technical Assessment Guide (EPRI-TAG®). The combination of potential resource options includes a diverse range of natural gas, coal, nuclear and renewable powered alternatives. The following table compares the all-in cost of the supply side options on a dollar per MWh basis, including the components of capital cost, fixed O&M, variable O&M, fuel, and emissions.

Table 16: Supply Side Technology Options ** Highly Confidential **

3.1.4 LIFE ASSESSMENT & MANAGEMENT PROGRAM

This section provides the updated long-term plant equipment needs utilized in the 2014 Annual Update. These needs were developed using the Life Assessment and Management Program (LAMP) that was developed in the late 1980's for the purpose of identifying, evaluating, and recommending improvements and special maintenance requirements necessary for continued reliable operation of KCP&L coal-fired and Hawthorn 6/9 natural gas generating units.

Current schedules of identified LAMP projects and costs for Montrose Units 1, 2, 3, and LaCygne (KCP&L Share) are shown below in Table 17 through Table 28.

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Table 17: Montrose Unit 1 LAMP Capital Plan Years 2019 - 2026 ($000's) **Highly Confidential**

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Table 18: Montrose Unit 1 LAMP Capital Plan Years 2027 - 2033 ($000's) **Highly Confidential**

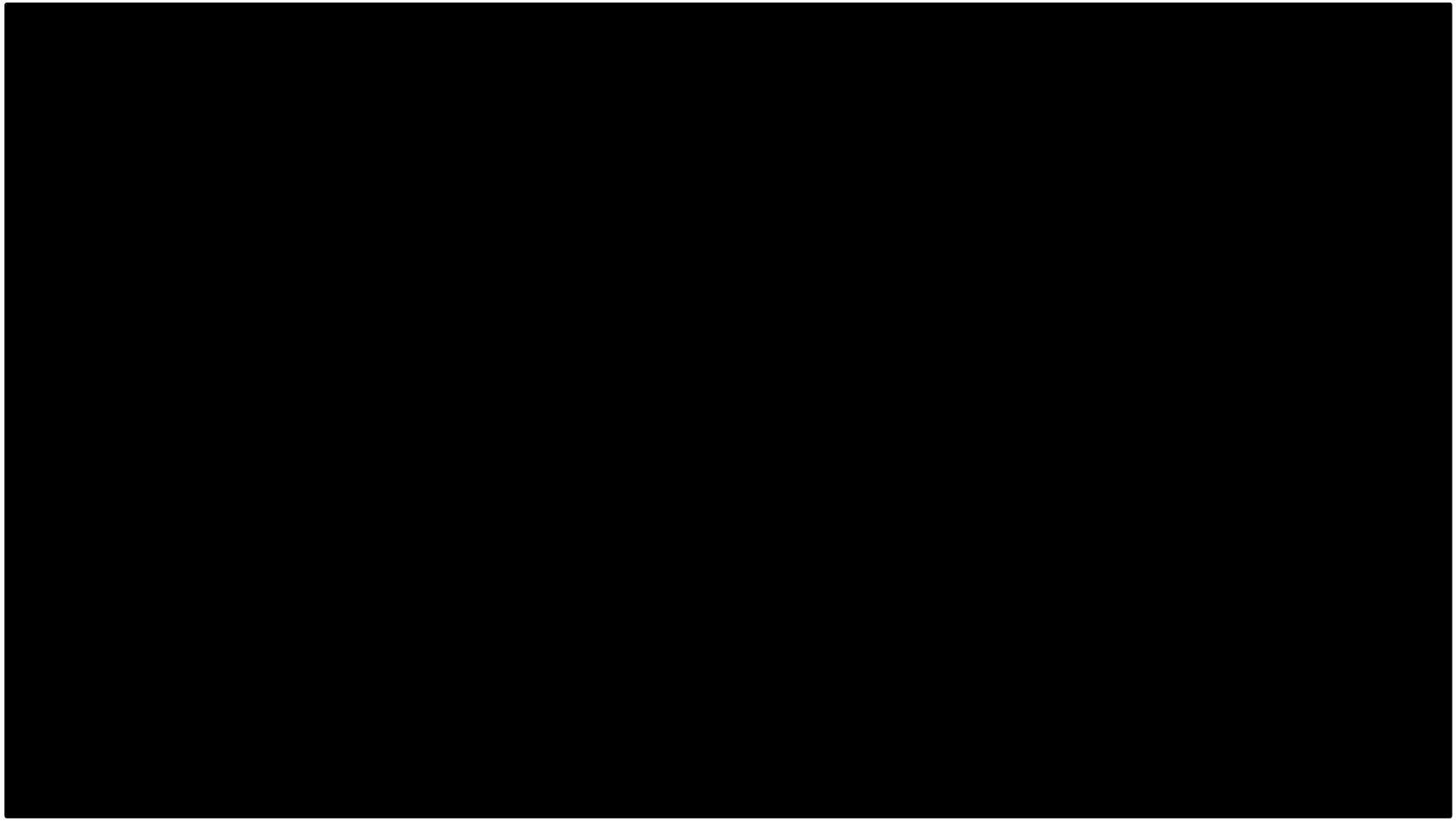

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Table 19: Montrose Unit 2 LAMP Capital Plan Years 2019 - 2026 ($000's) **Highly Confidential**

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Table 20: Montrose Unit 2 LAMP Capital Plan Years 2027 - 2033 ($000's) **Highly Confidential**

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Table 21: Montrose Unit 3 LAMP Capital Plan Years 2019 - 2026 ($000's) **Highly Confidential**

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Table 22: Montrose Unit 3 LAMP Capital Plan Years 2027 - 2033 ($000's) **Highly Confidential**

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Table 23: Montrose Station Common LAMP Capital Plan Years 2019 - 2033 ($000's) **Highly Confidential**

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Table 24: KCP&L Share of LaCygne Unit 1 LAMP Capital Plan Years 2019 - 2026 ($000's) **Highly Confidential**

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Table 25: KCP&L Share of LaCygne Unit 1 LAMP Capital Plan Years 2027 - 2033 ($000's) **Highly Confidential**

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Table 26: KCP&L Share of LaCygne Unit 2 LAMP Capital Plan Years 2019 - 2026 ($000's) **Highly Confidential**

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Table 27: KCP&L Share of LaCygne Unit 2 LAMP Capital Plan Years 2027 - 2033 ($000's) **Highly Confidential**

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Table 28: KCP&L Share of LaCygne Common LAMP Capital Plan Years 2019 - 2033 ($000's) Highly Confidential****

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SECTION 4: TRANSMISSION AND DISTRIBUTION UPDATE

4.1 SMARTGRID DEMONSTRATION PROJECT - 2013 MID-PROJECT TECHNOLOGY PERFORMANCE REPORT (TPR)

As a DOE Smart Grid Demonstration Project requirement, KCP&L produced its first Interim Technology Performance Report (TPR) on December 31, 2012. That document summarized all achievements on the project through that date. Key topics include summaries of the project design, implementation, analysis, and some lessons learned thus far. Due to the voluminous size of this report, it has not been included in the Annual Update, but can be downloaded from the following DOE website; https://www.smartgrid.gov/recovery_act/program_impacts/regional_demonstration_technology_performance_reports

A second Interim Technology Performance Report was produced on December 31, 2013 and submitted to the Department of Energy. This document revisited preliminary assessments from the 2012 documentation by providing greater detail regarding incremental implementation activities and corresponding system and integration testing. Furthermore, it presented the operational demonstration and testing plans for remaining project activities. Due to the voluminous size of this report, it has not been included in the Annual Update, but will be available for download from the DOE website previously mentioned

A third Interim Technology Performance Report will be produced at the end of 2014. This document will extend the 2013 interim report by providing greater detail regarding the results of the operational demonstrations conducted and summarize the corresponding benefits analysis performed using the DOE SmartGrid and Energy Storage Computational Tools. These findings will be augmented with a discussion of technology gaps, operational issues, and best practices identified throughout the project report. The report will conclude with a summary of the build and impact metrics reported to the DOE.

A project Final Technical Report will be produced in early 2015 following the conclusion of the project and will synthesize all learning's from the entirety of project.

4.2 RTO EXPANSION PLANNING

KCP&L assessment of RTO expansion plans is an ongoing process that occurs throughout the various regional planning processes conducted by SPP. These assessments include review and approval of plan scope documents, review and approval of plan input assumptions, review of plan study analysis and results with feedback from KCP&L staff, and review and approval of final plan reports. All transmission projects for the KCP&L service territory that are identified in SPP Regional Plans are included in KCP&L's annual Transmission Expansion Plan which performs an assessment of those projects for meeting the requirements of the NERC Reliability Standards. By meeting the performance standards established for transmission planning in the NERC Reliability Standards the assessment ensures that adequate transmission is available in the near term and long term to meet the firm load and transmission service requirements included in the SPP Regional Plan for KCP&L. This document is attached as Appendix A 2013 TPL Compliance Assessment HC.pdf.

SECTION 5: DEMAND-SIDE RESOURCE ANALYSIS UPDATE

5.1 DEMAND-SIDE MANAGEMENT LEVEL UPDATE

The 2014 Annual Update utilized the results of the final version of Navigant Demand-Side Management Potential Study published in August, 2013. DSM alternatives were based on the Realistic Achievable Potential (RAP) and the Maximum Achievable Potential (MAP), which were identified in the Potential Study. Five DSM alternatives were utilized in Integrated Analysis - MEEIA/RAP, MAP, RAP plus 1/3 of the difference between RAP and MAP, RAP plus 2/3 the difference between RAP and MAP, and approximately half-RAP.

5.2 MODIFICATIONS MADE TO THE DSM LEVELS FROM THE POTENTIAL STUDY

The Navigant DSM Potential Study data, that was used for this update, included all C&I customers. At the time of the analysis, KCP&L did not have a list of customers who have, or will, Opt-Out. For purposes of this update, the company assumed that the same percentage of C&I load would Opt-Out that did in GMO. So the company reduced the total amount of DSM from C&I customers, in KCP&L, by 15%.KCP&L Greater Missouri Operations Company (GMO) received Opt-Out requests from some of the large Commercial and Industrial (C&I) customers that were eligible to do so. The GMO customers requesting to Opt-Out of DSM amounted to 18% of GMO's large C&I load, which amounts to 15% of GMO's total C&I load. In order to account for the resulting reduction in potential C&I DSM due to those customers who Opted-Out, the company reduced the DSM from C&I customers by 15%.

5.3 MEEIA/RAP ALTERNATIVE

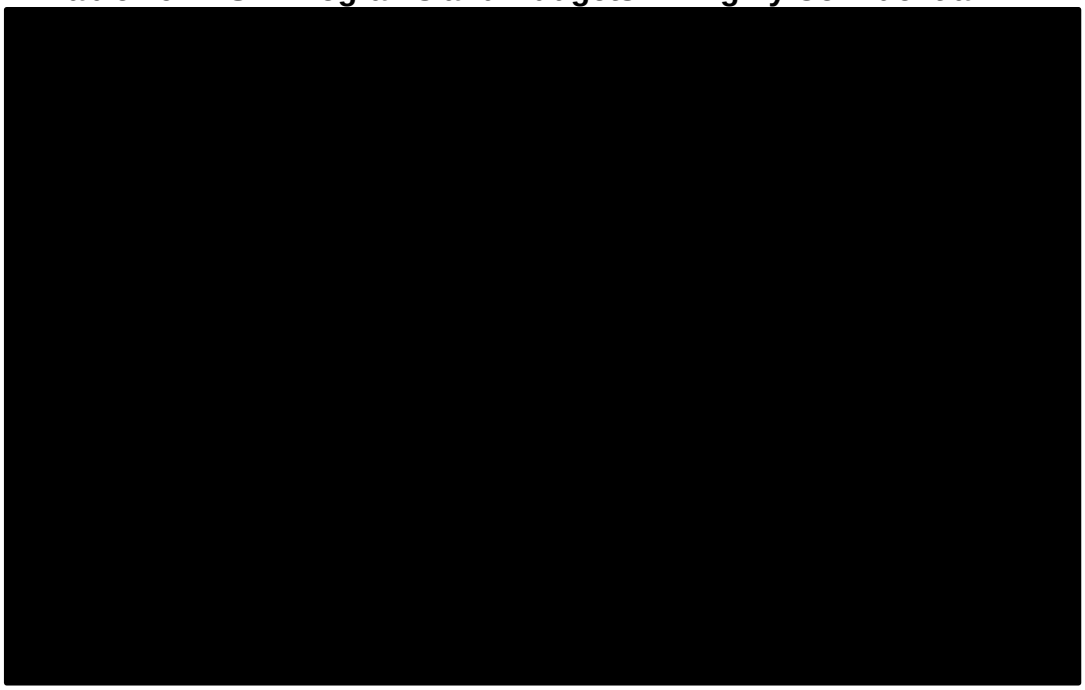
KCP&L developed a modified RAP level of DSM for 2014, and 2015, followed by the potential study RAP level starting in 2016 and beyond. The modification was based on the measure list from the Potential Study but at a level comparable to the GMO approved MEEIA DSM plan for years 2014 and 2015. The modified DSM plan is named MEEIA/RAP. This plan assumes DSM programs would include measures

recommended in the potential study RAP level. The DSM savings levels for this scenario are based on the cost per kWh from the RAP level of DSM in the Potential Study results but the amount of capacity and energy savings would be reduced proportionately to reflect the reduced amount of savings that could be achieved with a level of spending comparable to the GMO approved MEEIA plan for years 2014 and 2015. This plan also assumes the potential study RAP level for program years 2016 and beyond.

KCP&L filed a MEEIA case in January 2014 and is currently collaborating with Stakeholders regarding the KCP&L MEEIA filing with resolution expected sometime in 2014. The KCPL MEEIA filing included 13 Demand-Side Management programs for a 2014-2015 timeframe, with an eighteen month budget of $28,341 and an eighteen month energy savings goal of 155,597,753 kWh.

A listing of the DSM programs including the proposed 2014-2015 budget expenditures are provided in Table 29 below:

Table 29: DSM Programs and Budgets ** Highly Confidential **



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5.4 DEMAND-SIDE MANAGEMENT: ADDRESSING 2013 ANNUAL UPDATE ISSUES

5.4.1 NATURAL RESOURCES DEFENSE COUNCIL (NRDC)

Responses to submittal by Kimiko Narita on behalf of NRDC, August 21, 2013:

Page 3, Item 1: "The Update relies on flawed preliminary potential study results":

Response: The latest version available of the Navigant Potential Study was utilized for the 2013 Annual Update filing. A final version of the Navigant Potential study was published in August 2013 and the data was used as the basis of the 2014 Annual Update.

Page 6, Item 2: "Neither the Navigant draft potential study nor the IRP analysis fully considers the impacts of energy efficiency technologies that are reasonably expected to be available during the planning horizon relevant to the IRP. The cumulative potential for efficiency inexplicably begins to dry up in year eleven of the program."

Response: As part of the potential study analysis, Navigant developed a comprehensive measure list of conventional and emerging technologies as the first step in the measure characterization process described in Section 8.1 below. The initial measure list was identified through a review of a) previous DSM potential studies conducted for the state of Missouri and other Missouri utilities, b) other Navigant potential, evaluation and program design work, and c) existing GMO program descriptions and custom applications. Navigant then modified the measure list – both adding and deleting measures - to incorporate feedback from GMO and Missouri stakeholders. Overall, 500 total measures were considered across the sectors and end-uses listed below, with 300 characterized for the final model. The final list of measures, including detailed measure characterization results, can be found in Appendix A of Navigant's Potential Study, which has been submitted as a workpaper to the 2014 Annual Update filing. For example, emerging technologies such as LEDs show market penetration later in the forecast horizon as their costs and performance

come down an estimated learning curve, thereby improving their competitiveness with other measures such as CFLs.

Page 7, Item 3: "The Update relies on analysis that contains patent inconsistencies and errors"

Response: The 2014 Annual Update utilized the final results of the Navigant Demand-Side Management Potential Study which was published in August 2013. Five scenarios were created and based on the Realistic Achievable Potential (RAP) and the Maximum Achievable Potential (MAP), which were identified in the Potential Study. The five scenarios are MEEIA/RAP, MAP, RAP plus 1/3 of the difference between RAP and MAP, RAP plus 2/3 the difference between RAP and MAP, and approximately half-RAP.

Page 9, Item 4: "The Update fails to adequately model a reasonable range of DSM scenarios."

Response: KCP&L contends that modeling five DSM scenarios in the 2013 Annual Update was a sufficient range of DSM levels.

Page 11, Item 5: "Neither the draft potential study nor the IRP analysis considers the impacts of rate design on energy use".

Response: The impact of rate design was considered as part of the demand response analysis in the Navigant potential study. Navigant conservatively assumes there are no significant energy savings from the Companies' Demand Response or dynamic pricing rate plans in any scenario. Navigant conducted the analysis for this study using its Demand Response Simulator (DRSim™) model. This model is designed to identify the critical component variables of peak demand impact, avoided cost estimates, program administration and evaluation costs, one-time startup costs, any incentive costs, and the appropriate population of potential participants. Navigant mirrored the model's approach after the methodology that the Federal Energy Regulatory Commission (FERC) used in its National Assessment of Demand

Response Potential (NADR) analysis with a number of customizations added to specifically tailor the framework and inputs to the Companies.

5.4.2 SIERRA CLUB

Response to submittal by Thomas Cmar on behalf of Sierra Club, August 21, 2013:

"Unsupported Adjustment to DSM Potential Study":

Response: The Navigant DSM Potential Study data, that was used for this update, included all C&I customers. At the time of the analysis, KCP&L did not have a list of customers who have, or will, Opt-Out. For purposes of this update, the company assumed that the same percentage of C&I load would Opt-Out that did in GMO. So the company reduced the total amount of DSM from C&I customers, in KCP&L, by 15%.

KCP&L Greater Missouri Operations Company (GMO) received Opt-Out requests from some of the large Commercial and Industrial (C&I) customers that were eligible to do so. The GMO customers requesting to Opt-Out of DSM amounted to 18% of GMO's large C&I load, which amounts to 15% of GMO's total C&I load. In order to account for the resulting reduction in potential C&I DSM due to those customers who Opted-Out, the company reduced the DSM from C&I customers by 15%.

SECTION 6: INTEGRATED RESOURCE PLAN AND RISK ANALYSIS UPDATE

6.1 CHANGES FROM REVISED 2013 ANNUAL UPDATE

Since the filing of the Revised 2013 Annual Update, changing conditions have contributed to the Preferred Plan identified in the Revised filing as being obsolete. The changing conditions, or major drivers, that have contributed to KCP&L's need to develop new Alternative Resource Plans and therefore selection of a new Preferred Plan include:

- Proposed and Potential Environmental Regulations
- Load Forecast Projections
- Demand-Side Management Program levels

6.2 CRITICAL UNCERTAIN FACTORS

The Critical Uncertain Factors for the 2014 Annual Update were same as those in the Revised 2013 Annual Update. The Critical Uncertain Factors identified were incorporated into a decision tree representation of the risks that will impact the performance of the alternative resource plans. A graphical representation of the decision tree risks is provided in Figure 6 below:

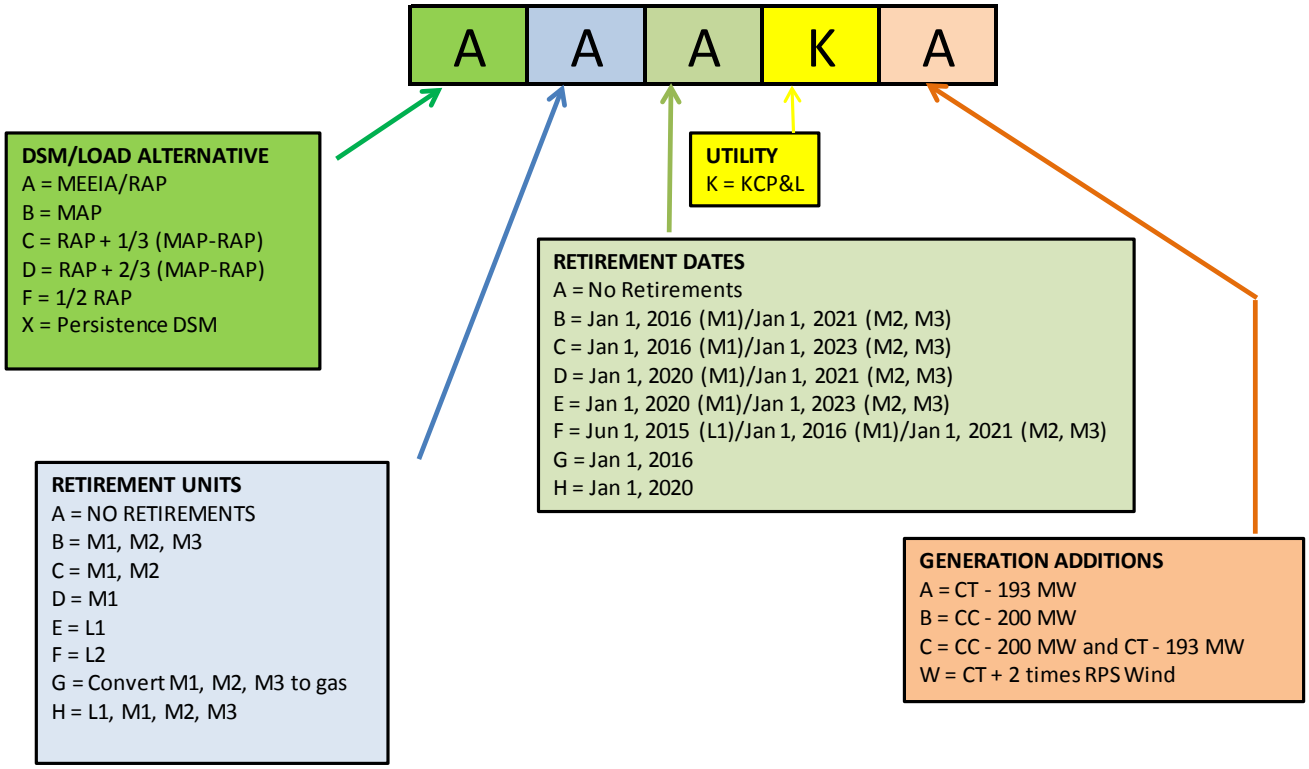
Figure 6: Decision Tree Probabilities

Endpoint	Load Growth	Natural Gas	CO_2	Endpoint Probability
1	High	High	High	1.6%
2	High	High	Mid	3.1%
3	High	High	Low	1.6%
4	High	Mid	High	3.1%
5	High	Mid	Mid	6.3%
6	High	Mid	Low	3.1%
7	High	Low	High	1.6%
8	High	Low	Mid	3.1%
9	High	Low	Low	1.6%
10	Mid	High	High	3.1%
11	Mid	High	Mid	6.3%
12	Mid	High	Low	3.1%
13	Mid	Mid	High	6.3%
14	Mid	Mid	Mid	12.5%
15	Mid	Mid	Low	6.3%
16	Mid	Low	High	3.1%
17	Mid	Low	Mid	6.3%
18	Mid	Low	Low	3.1%
19	Low	High	High	1.6%
20	Low	High	Mid	3.1%
21	Low	High	Low	1.6%
22	Low	Mid	High	3.1%
23	Low	Mid	Mid	6.3%
24	Low	Mid	Low	3.1%
25	Low	Low	High	1.6%
26	Low	Low	Mid	3.1%
27	Low	Low	Low	1.6%

6.3 ALTERNATIVE RESOURCE PLAN DEVELOPMENT

Alternative resource plans were developed using a combination of supply-side resources, demand-side resources, various resource addition timings, as well as generation retirement options and timings. The plan-naming convention utilized for the alternative resource plans developed is shown in Table 30 below:

Table 30: Alternative Resource Plan Naming Convention



Definitions:

DSM - Demand-Side Management
RAP - Realistic Achievable Potential
MAP - Maximum Achievable Potential
MEEIA - Missouri Energy Efficiency Investment Act
RPS - Renewable Portfolio Standard

M1 - Montrose Unit 1
M2 - Montrose Unit 2
M3 - Montrose Unit 3
L1 - LaCygne Unit 1
L2 - LaCygne Unit 2

CT - Combustion Turbine
CC - Combined Cycle

Alternative Resource Plans were developed using a combination of various supply-side resources and demand-side resources. An overview of the Alternative Resource Plans is shown in Table 31 to Table 34 below.

Table 31: Overview of Alternative Resource Plans

Plan Name	DSM Level	Retirement Assumption	Retirement Year	Renewable Additions		Generation Addition (if needed)
ABBKA	MEEIA/RAP	Montrose-1 Montrose-2 Montrose-3	2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2031
AAAKA	MEEIA/RAP	none	n/a	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
ABBKW	MEEIA/RAP	Montrose-1 Montrose-2 Montrose-3	2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2031
ABCKA	MEEIA/RAP	Montrose-1 Montrose-2 Montrose-3	2016 2023 2023	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2031
ABDKA	MEEIA/RAP	Montrose-1 Montrose-2 Montrose-3	2020 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2031

Table 32: Overview of Alternative Resource Plans (continued)

Plan Name	DSM Level	Retirement Assumption	Retirement Year	Renewable Additions		Generation Addition (if needed)
ABEKA	MEEIA/RAP	Montrose-1 Montrose-2 Montrose-3	2020 2023 2023	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2031
ABGKA	MEEIA/RAP	Montrose-1 Montrose-2 Montrose-3	2016 2016 2016	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2016
ACBKA	MEEIA/RAP	Montrose-1 Montrose-2	2016 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
ACDKA	MEEIA/RAP	Montrose-1 Montrose-2	2020 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
ACEKA	MEEIA/RAP	Montrose-1 Montrose-2	2020 2023	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n

Table 33: Overview of Alternative Resource Plans (continued)

Plan Name	DSM Level	Retirement Assumption	Retirement Year	Renewable Additions		Generation Addition (if needed)
ADGKA	MEEIA/RAP	Montrose-1	2016	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
ADHKA	MEEIA/RAP	Montrose-1	2020	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
AHFKA	MEEIA/RAP	LaCygne-1 Montrose-1 Montrose-2 Montrose-3	2015 2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2016 193 MW CT in 2024 193 MW CT in 2031
AHFKB	MEEIA/RAP	LaCygne-1 Montrose-1 Montrose-2 Montrose-3	2015 2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	200 MW CC in 2016 200 MW CC in 2024 200 MW CC in 2032
AHFKC	MEEIA/RAP	LaCygne-1 Montrose-1 Montrose-2 Montrose-3	2015 2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	200 MW CC in 2016 193 MW CT in 2024 193 MW CT in 2031

Table 34: Overview of Alternative Resource Plans (continued)

Plan Name	DSM Level	Retirement Assumption	Retirement Year	Renewable Additions		Generation Addition (if needed)
BBBKA	MAP	Montrose-1 Montrose-2 Montrose-3	2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
CBBKA	RAP + 1/3(MAP-RAP)	Montrose-1 Montrose-2 Montrose-3	2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
DBBKA	RAP + 2/3(MAP-RAP)	Montrose-1 Montrose-2 Montrose-3	2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	n/n
XAAKA	Persistence Only	none	n/a	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2030
XBBKA	Persistence Only	Montrose-1 Montrose-2 Montrose-3	2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2016 - 200 MW 2024 - 200 MW 2032- 150 MW	386 MW CT in 2021 193 MW CT in 2026 193 MW CT in 2033

Refer to Appendix B, Capacity Balance Spreadsheets HC, for tables which provide the KCP&L 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 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.

6.4 REVENUE REQUIREMENT AND PROBABLE ENVIRONMENTAL COSTS

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 35 below. For each of the Alternative Resource Plans, the Probable Environmental Costs are shown in Table 36 below.

Table 35: Twenty-Year Net Present Value Revenue Requirement

Rank (L-H)	Plan	NPVRR ($mm)	Delta
1	ABBKA	$20,074	$0
2	ABDKA	$20,092	$18
3	ABCKA	$20,111	$36
4	ABEKA	$20,128	$54
5	ABBKW	$20,131	$57
6	ABGKA	$20,239	$165
7	AHFKC	$20,244	$170
8	AHFKA	$20,245	$171
9	AHFKB	$20,268	$194
10	CBBKA	$20,274	$200
11	ACBKA	$20,276	$202
12	ACDKA	$20,294	$220
13	ACEKA	$20,313	$238
14	ADGKA	$20,474	$400
15	ADHKA	$20,493	$419
16	XBBKA	$20,543	$468
17	DBBKA	$20,549	$475
18	AAAKA	$20,739	$665
19	BBBKA	$20,824	$750
20	XAAKA	$20,833	$759

Table 36: Twenty-Year Net Present Value Revenue Requirement - Probable Environmental Cost

Plan	PEC NPVRR ($mm)
AHFKA	$595
AHFKC	$599
AHFKB	$599
ABGKA	$686
BBBKA	$716
ABBKW	$716
DBBKA	$716
CBBKA	$717
ABBKA	$717
XBBKA	$718
ABDKA	$730
ABCKA	$735
ABEKA	$748
ACBKA	$868
ACDKA	$881
ACEKA	$889
ADGKA	$1,022
ADHKA	$1,034
AAAKA	$1,206
XAAKA	$1,211

6.5 PERFORMANCE MEASURES

A summary tabulation of the expected value of all performance measures is provided in Table 37 below. Plan detail results behind this summary tabulation are attached in Appendix D, Economic Impact for Each Alternative Resource Plan HC..

Table 37: Expected Value of Performance Measures ** Highly Confidential **

6.5.1 CUMULATIVE PROBABILITIES FOR PERFORMANCE MEASURES

Table 38: Cumulative Probability - NPVRR

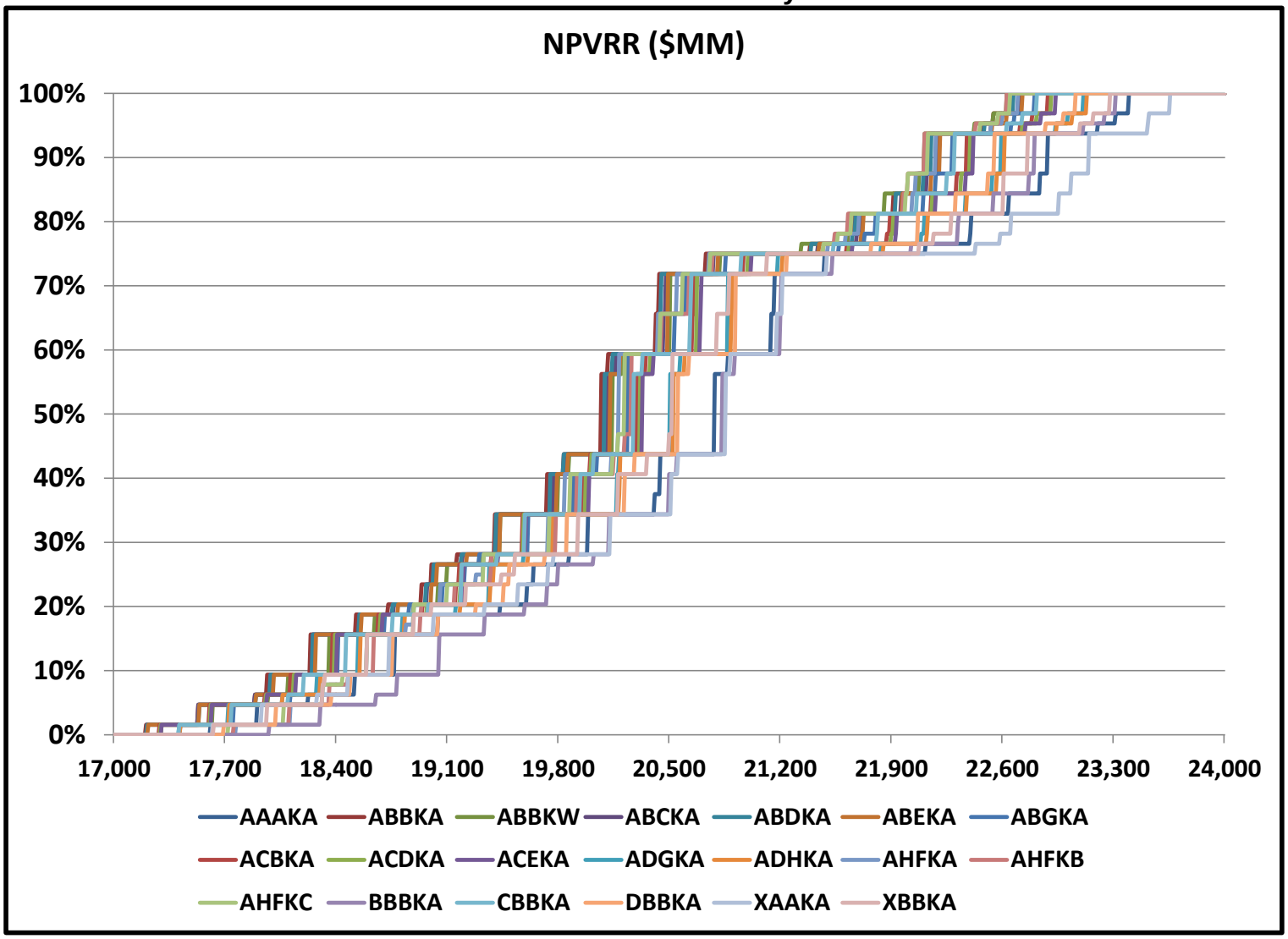


Table 39: Cumulative Probability - Probable Environmental Costs

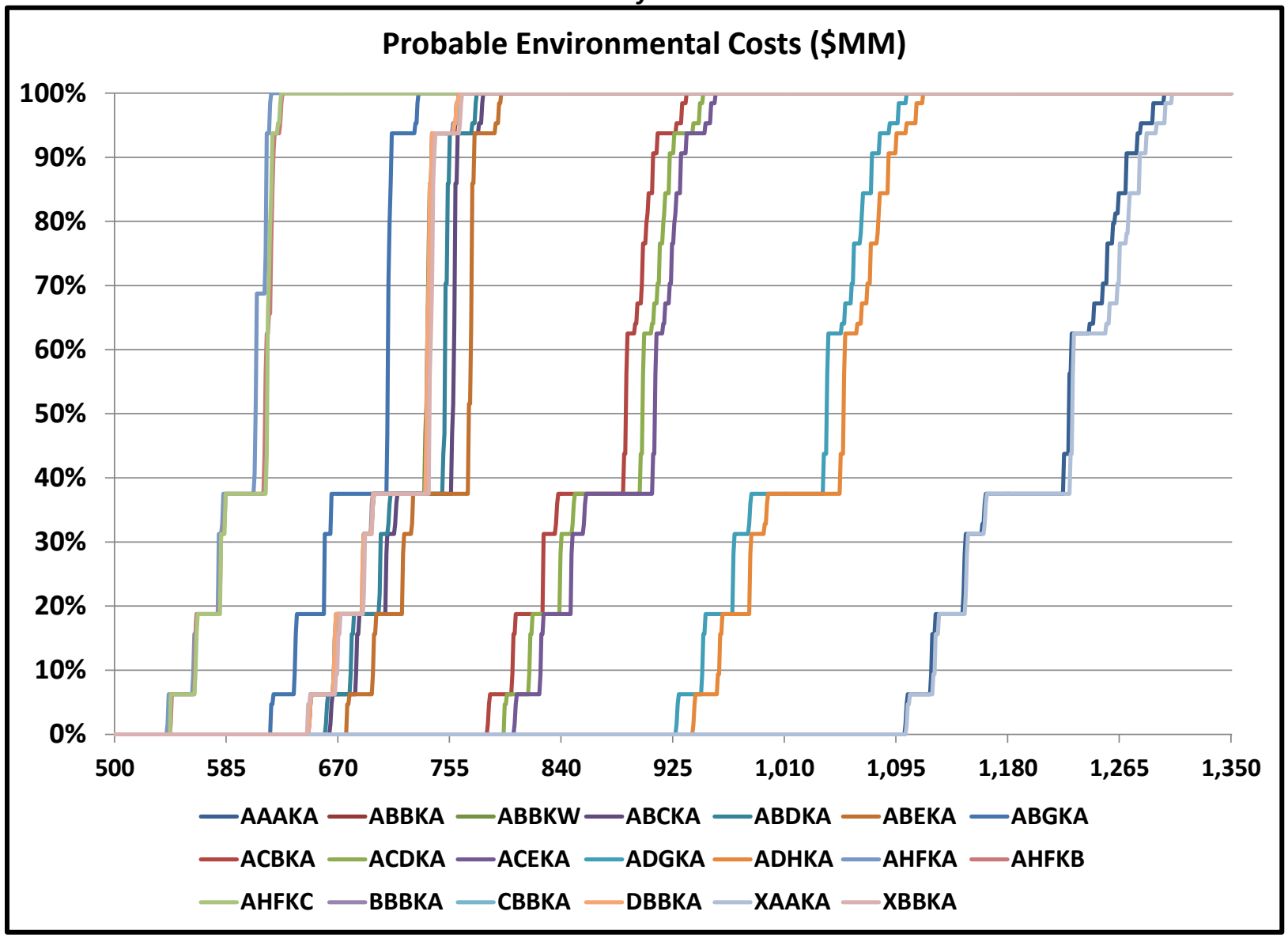
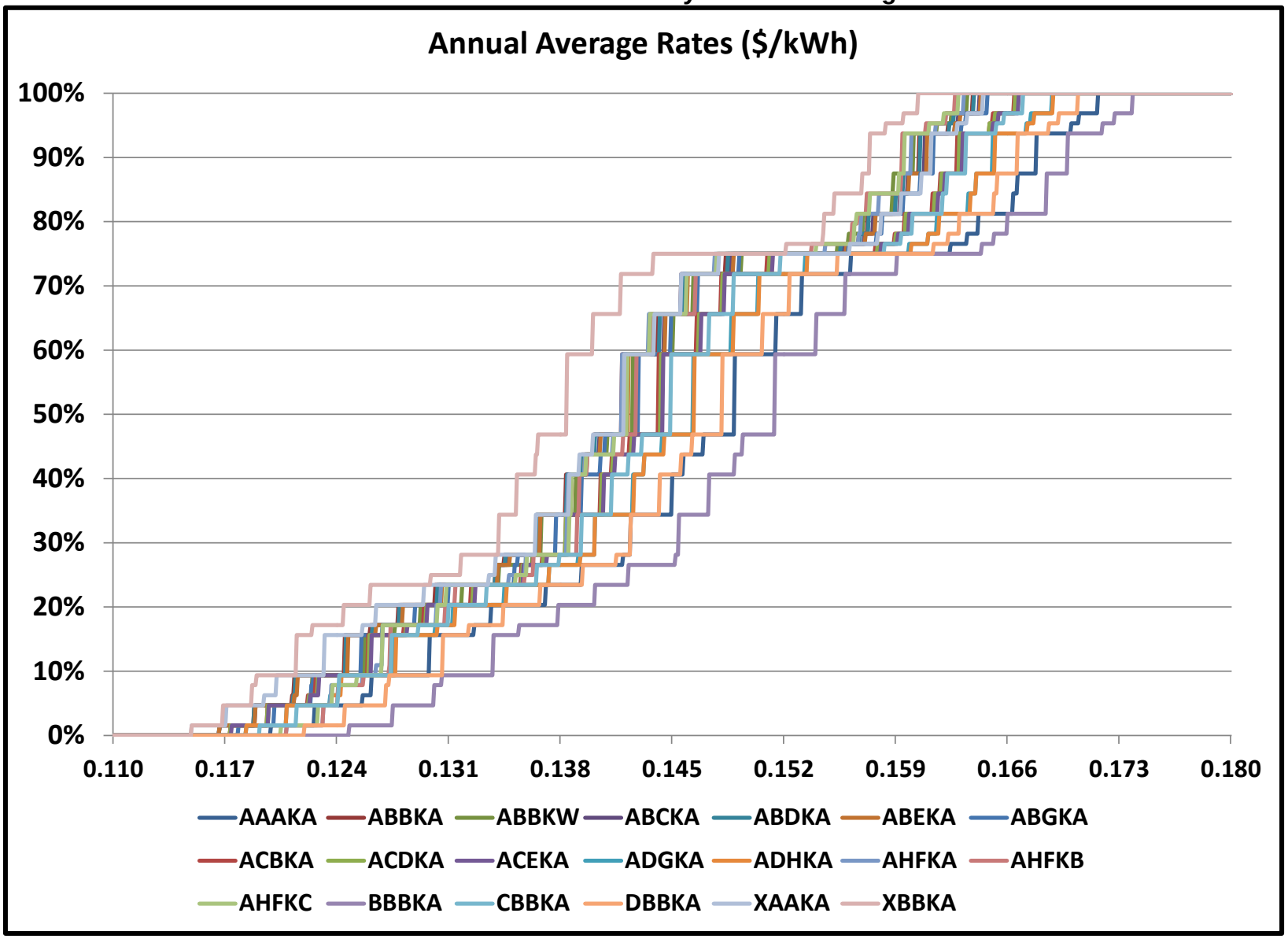


Table 40: Cumulative Probability - Annual Average Rates



6.6 UNSERVED ENERGY

There was no unserved energy for any of the Alternative Resource Plans analyzed:

6.7 COMBINED KCP&L/GMO RESOURCE PLANS

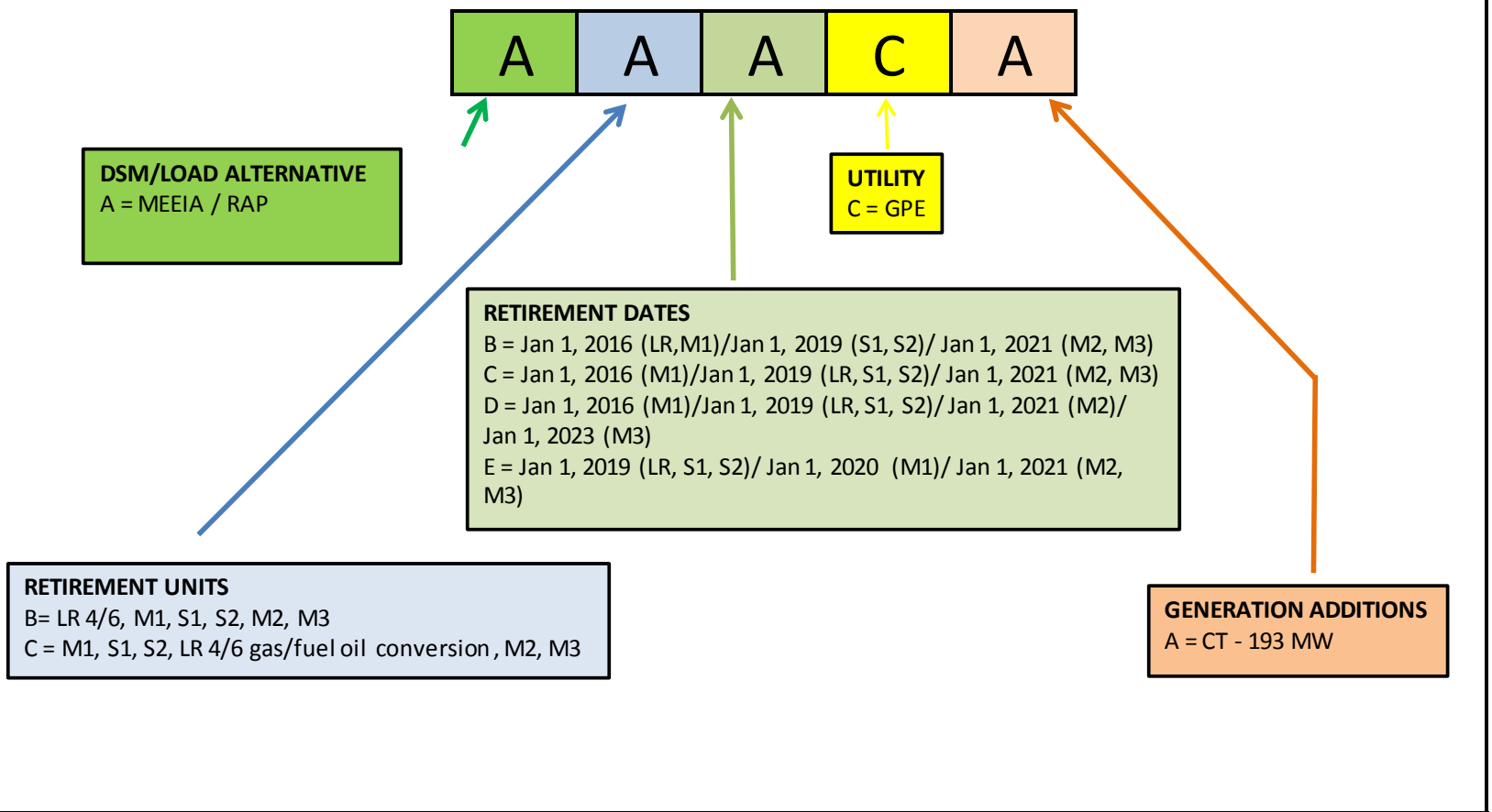
KCP&L/GMO are both held by Great Plains Energy, additional alternative resource plans were developed to determine if the KCP&L and/or GMO stand-alone resource plans should be modified to reflect potential combined company operations. This additional analysis is intended to minimize the risk that either stand-alone utility would implement an alternative resource plan that would not be in the best interests of Missouri retail customers under combined-company operations. For example, KCP&L has more base load resources available for service to its retail customers than does GMO. While the planning results indicate that KCP&L's Montrose station should be retired over the next several years, a combined KCP&L/GMO asset analysis could indicate that it is in the best interests of Missouri retail customers to keep Montrose in service for a longer period of time under a combined company scenario.

The combined company alternative resource plans were based on the results of the stand-alone company analysis. In general, they reflect combinations of the lowest NPVRR plans on a stand-alone company basis. For example, combined company plan ACCCA is the combination of KCP&L alternative resource plan ABBKA (retire Montrose 1 in 2016 and Montrose 2&3 in 2021) and GMO alternative resource plan ACGGA (Lake Road 4/6 on natural gas-fuel oil backup in 2016, retire Lake Road 4/6 and Sibley 1&2 in 2019).

The NPVRR for each combined company alternative resource plan was determined under the same 27 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 combined company Alternative Resource Plans developed is shown in Table 41 below.

Table 41: Combined Company Alternative Resource Plan Naming Convention



Definitions:

DSM - Demand-Side Management	
RAP - Realistic Achievable Potential	**MEEIA - Missouri Energy Efficiency Investment Act**
CT - Combustion Turbine	**LR 4/6 - Lake Road 4/6**
M1 - Montrose Unit 1	**S1 - Sibley Unit 1**
M2 - Montrose Unit 2	**S2 - Sibley Unit 2**
M3 - Montrose Unit 3	**S3 - Sibley Unit 3**

Alternative Resource Plans were developed using various capacities of supply-side resources and demand-side resources. In total, four combined company Alternative Resource Plans were developed for the integrated resource analysis for this 2014 Annual Update. An overview of the Alternative Resource Plans is shown Table 42 below.

Table 42: Overview of Combined Company Resource Plans

Plan Name	DSM Level	Retirement Assumption	Retirement Year	Renewable Additions		Generation Addition (if needed)
ABBCA	MEEIA/RAP	Retire: Montrose-1 Lake Road 4/6	2016	Solar: 2018 - 21 MW 2021 - 12 MW 2023 - 3 MW	Wind: 2016 - 400 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2030
		Sibley-1 Sibley-2	2019			
		Montrose-2 Montrose-3	2021			
ACCCA	MEEIA/RAP	Retire: Montrose-1	2016	Solar: 2018 - 21 MW 2021 - 12 MW 2023 - 3 MW	Wind: 2016 - 400 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2030
		Lake Road 4/6* Sibley-1 Sibley-2	2019			
		Montrose-2 Montrose-3	2021			
ACDCA	MEEIA/RAP	Retire: Montrose-1	2016	Solar: 2018 - 21 MW 2021 - 12 MW 2023 - 3 MW	Wind: 2016 - 400 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2030
		Lake Road 4/6* Sibley-1 Sibley-2	2019			
		Montrose-2	2021			
		Montrose-3	2023			
ACECA	MEEIA/RAP	Retire: Lake Road 4/6* Sibley-1 Sibley-2	2019	Solar: 2018 - 21 MW 2021 - 12 MW 2023 - 3 MW	Wind: 2016 - 400 MW 2024 - 200 MW 2032- 150 MW	193 MW CT in 2030
		Montrose-1	2020			
		Montrose-2 Montrose-3	2021			
* Convert to Natural Gas/Fuel Oil in 2016						

Revenue requirement results for each of the combined company Alternative Resource Plans are shown in Table 43 below. For each of the Alternative Resource Plans, the Probable Environmental Costs are shown in Table 44 below.

Table 43: Combined-Company Twenty-Year Net Present Value Revenue Requirement

Rank (L-H)	Plan	NPVRR ($mm)	Delta
1	ABBCA	$31,081	$0
2	ACCCA	$31,086	$5
3	ACECA	$31,106	$25
4	ACDCA	$31,110	$29

Table 44: Combined-Company Twenty-Year Net Present Value Revenue Requirement - Probable Environmental Cost

Plan	PEC NPVRR ($mm)
ACCCA	$1,021
ABBCA	$1,022
ACDCA	$1,034
ACECA	$1,035

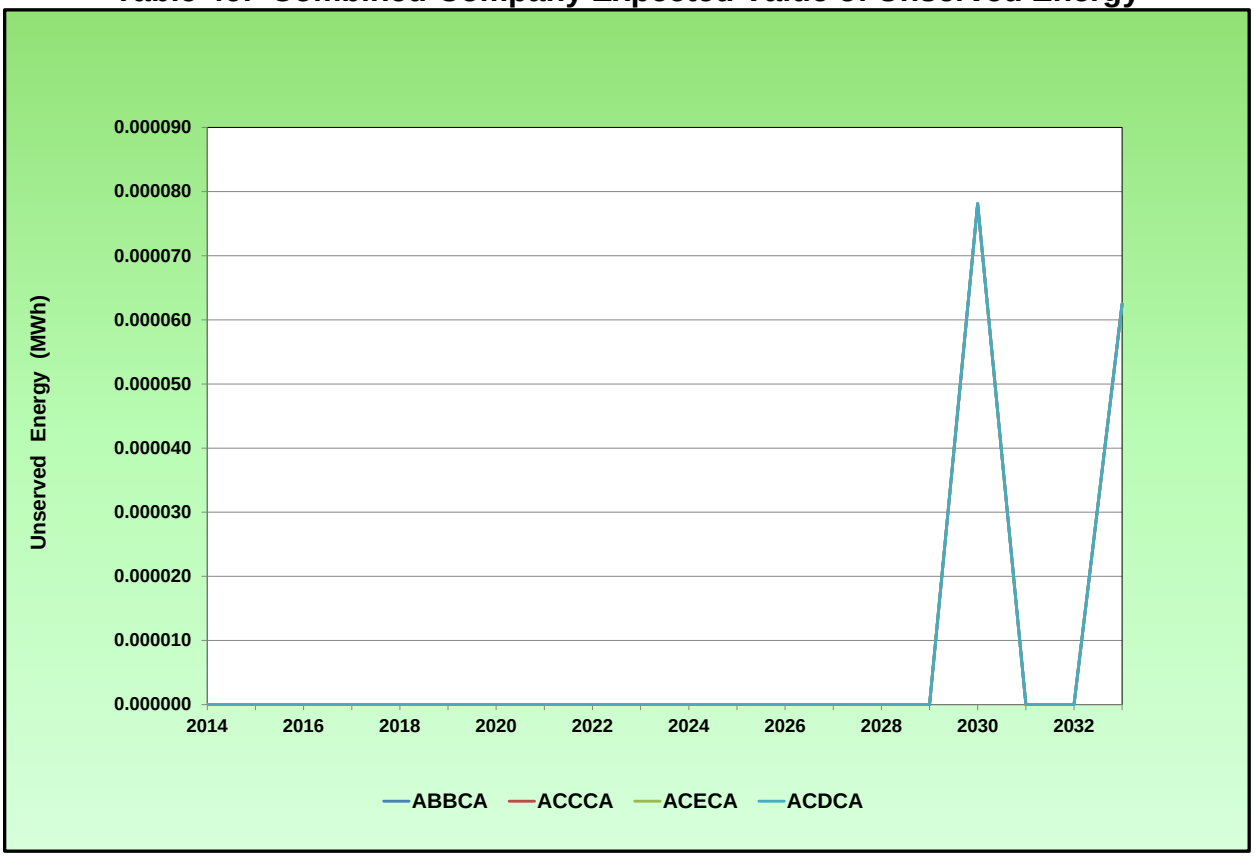
In general, the plan rankings are consistent with the stand-alone company plan results. As such, there was no need to adjust the KCP&L or GMO stand-alone Preferred Plans to accommodate future potential combined operations.

A summary tabulation of the expected value of all performance measures is provided in Table 45 below. Detailed results behind this summary tabulation are attached in Appendix D.

Table 45: Combined-Company Expected Value of Performance Measures ** Highly Confidential **

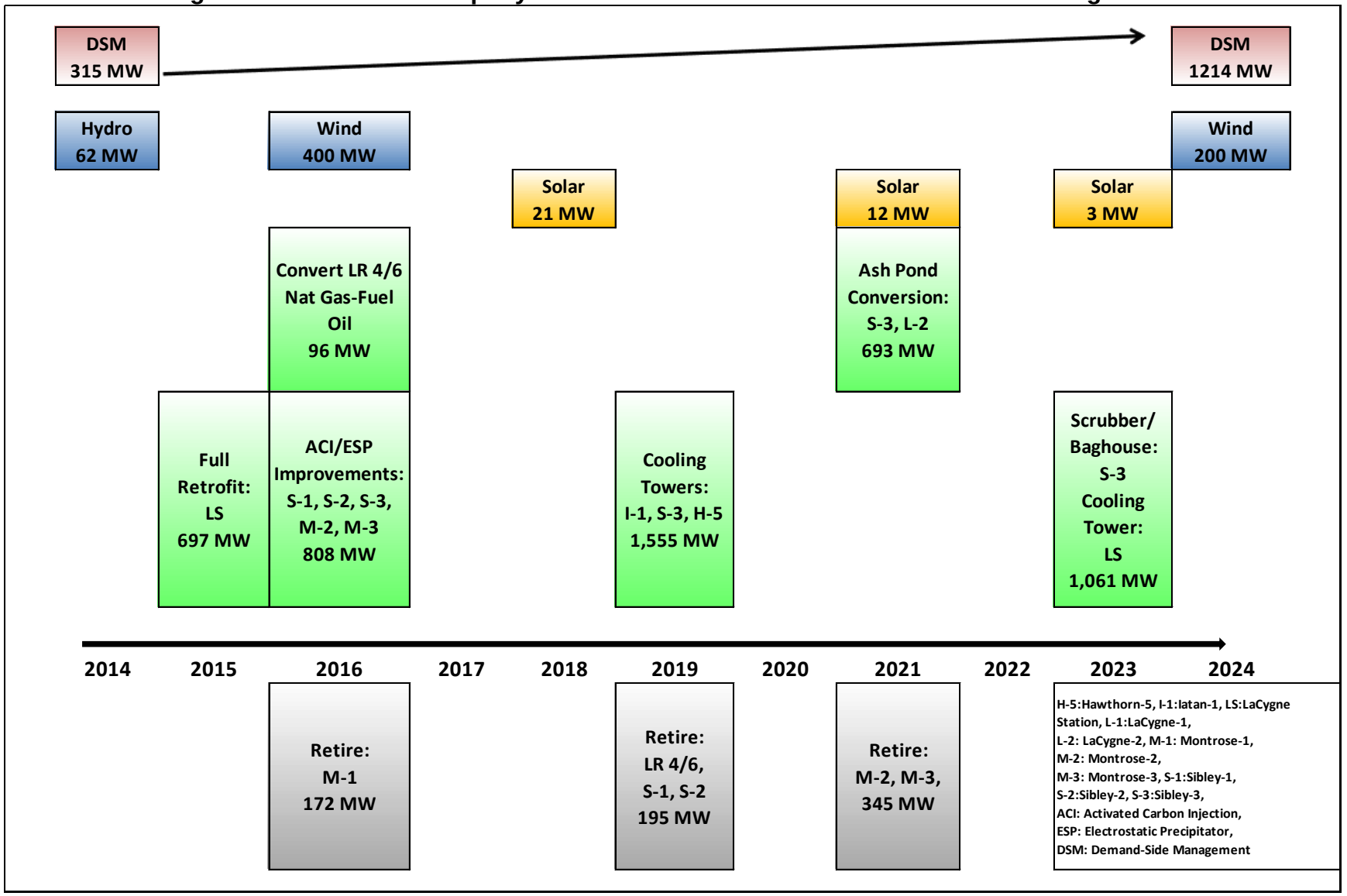
The expected value of unserved energy for all Combined-Company Alternative Resource Plans is provided in Table 46 below:

Table 46: Combined-Company Expected Value of Unserved Energy



The Combined-Company Alternative Resource Plan that reflects the combination of the KCP&L Preferred Plan, ABBKA and GMO's Preferred Plan, ACGGA is Alternative Resource Plan ACCCA. This plan is comprised of the following components for years 2014 – 2024 and shown in Figure 7 below. The combined-company additions shown are equivalent to the stand-alone KCP&L and GMO Alternative Resource Plans, ABBKA and ACGGA, respectively.

Figure 7: Combined-Company Alternative Resource Plan ACCCA - 2014 through 2024



The Combined-Company Alternative Resource Plan for the 20-year planning period is shown in Table 47 below:

Table 47: Combined-Company Alternative Resource Plan

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM (MW)	Retire (MW)	Existing Capacity (MW)
2014	-			316		6,459
2015	-			329		6,618
2016	-		400	480	172	6,441
2017	-			571		6,520
2018	-	21		678		6,520
2019	-			787	195	6,335
2020	-			889		6,335
2021	-	12		983	345	5,990
2022	-			1,070		5,990
2023	-	3		1,147		6,005
2024	-		200	1,214		5,943
2025	-			1,237		5,943
2026	-			1,260		5,943
2027	-			1,280		5,943
2028	-			1,297		5,943
2029	-			1,309		5,943
2030	193			1,319		5,943
2031	-			1,327		5,943
2032	-		150	1,334		5,943
2033	-			1,342		5,943

6.8 COMBINED-COMPANY ECONOMIC IMPACT

The economic impact by year of the Combined-Company Alternative Resource Plan ACCCA is represented in Table 48 below. The economic impact of all plans can be found in Appendix D.

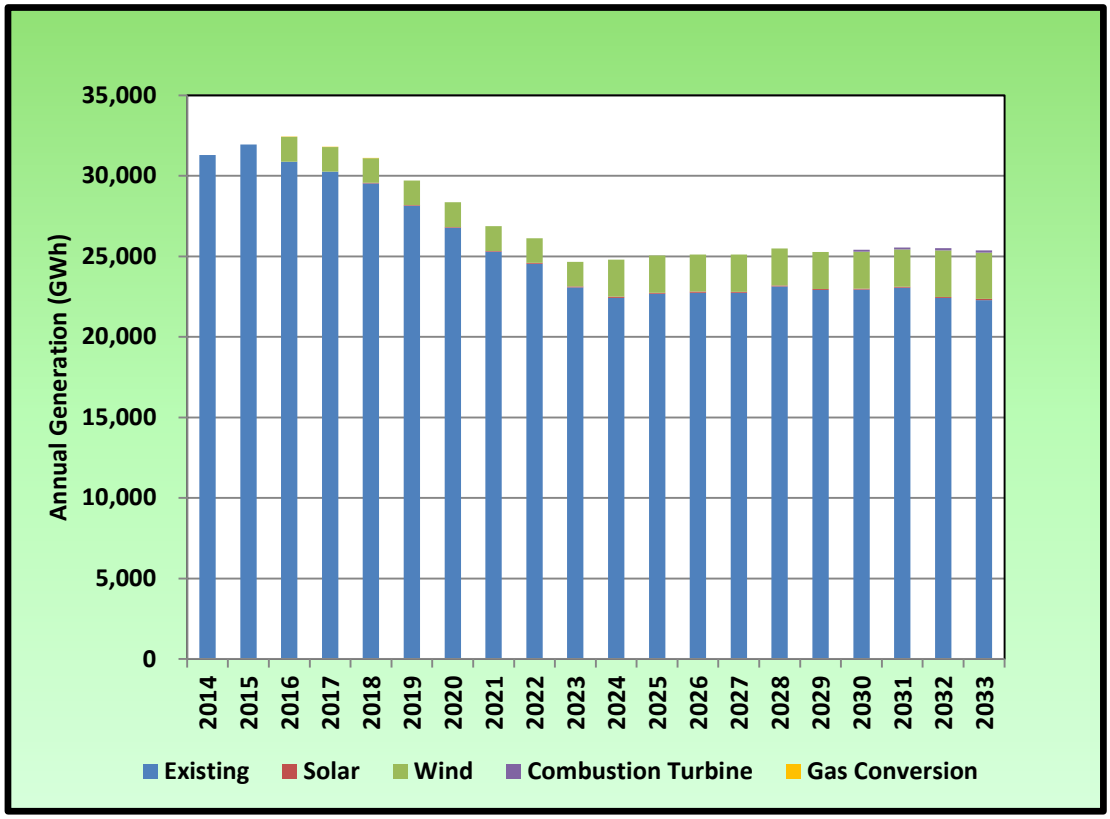
Table 48: Combined-Company Alternative Resource Plan - Economic Impact ** Highly Confidential **

HC

6.9 COMBINED-COMPANY ANNUAL GENERATION

The expected value of annual generation of the Combined-Company Alternative Resource Plan ACCCA is represented in Table 49 below. The annual generation of all Combined-Company plans can be found in Appendix C, Generation and Emissions for Each Alternative Resource Plan.

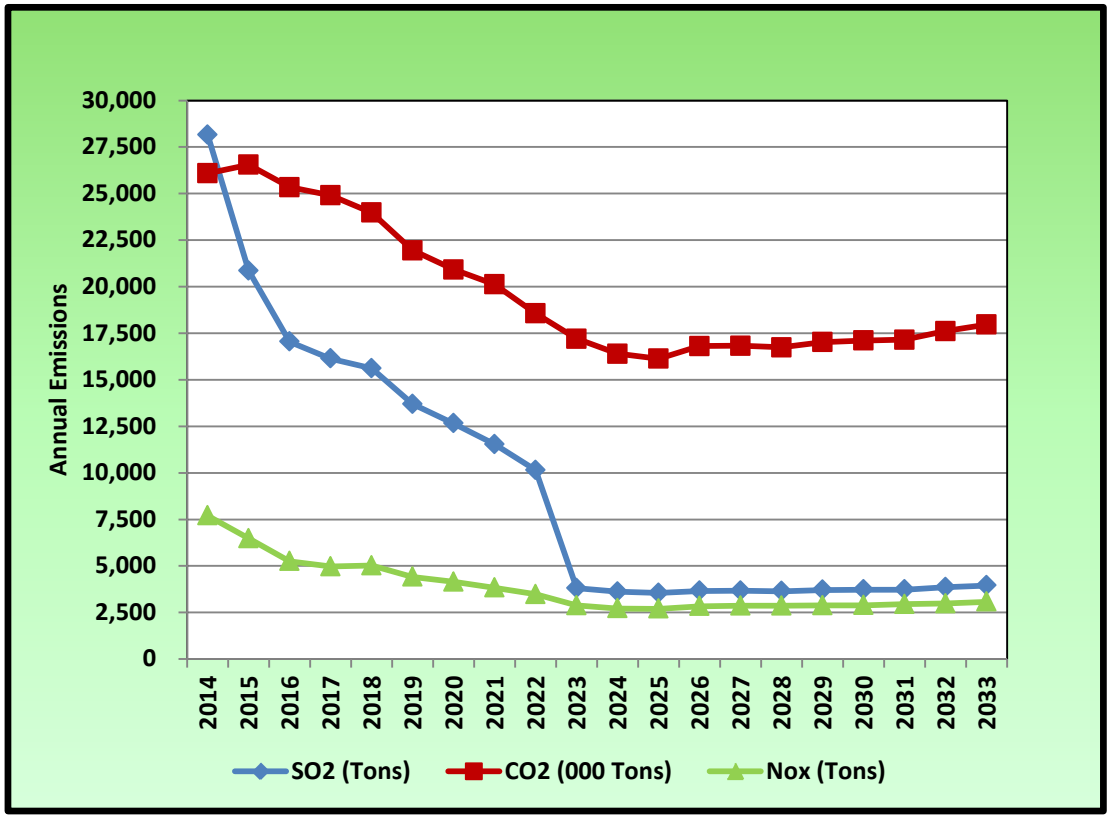
Table 49: Combined-Company Alternative Resource Plan ACCCA Annual Generation



6.10 COMBINED-COMPANY ANNUAL EMISSIONS

The expected value of annual emissions of the Combined-Company Alternative Resource Plan ACCCA are represented in Table 50 below. The annual emissions of all Combined-Company plans can be found in Appendix C.

Table 50: Combined-Company Alternative Resource Plan ACCCA Annual Emissions



6.11 REQUIREMENTS FOR JOINT PLANNING

KCP&L has researched what agreements and/or contracts must be in place to analyze joint company plans and makes the following findings:

The IRP rules (4 CSR 240-22. 080(1)) require that each electric utility selling over 1 million megawatt hours in Missouri must make a triennial compliance filing. The Company will be making separate IRP update filings for each Company that will reference joint planning information in certain sections of the IRP update filing. KCP&L, pursuant to the Joint Operating Agreement, will continue to operate and plan for GMO as a separate control area.

KCP&L and GMO believe this element of planning—planning that includes a joint company view—is an important element of resource planning for both companies.

As defined in 4 CSR 240-22.020 (1), Acknowledgement means that the commission finds the preferred resource plan, resource acquisition strategy, or the ***specified element*** of the resource acquisition strategy to be reasonable at a specific date, typically the date of the filing the utility's Chapter 22 compliance filing or the date the acknowledgment is given. (emphasis added)

At the time of this filing, KCP&L and GMO share the unique status of being Missouri investor owned utilities held by one holding company, Great Plains Energy. The Chapter 22 rules governing resource planning in Missouri are silent as to how planning should be conducted given this unique relationship.

6.12 INTEGRATED RESOURCE PLAN AND RISK ANALYSIS: ADDRESSING 2013 ANNUAL UPDATE ISSUES

6.12.1 MISSOURI PUBLIC SERVICE COMMISSION STAFF

Missouri Public Service Commission Staff report, August 20, 2013:

Summary Item 1, Page 2: KCPL's request in its 2013 Annual Report that the Commission acknowledge under 4 CSR 22.080(17) "planning that includes a joint company view – consistent with GMO's and KCP&L's business planning processes, is reasonable" cannot be given – in whole or in part - by the Commission because:

a) 4 CSR 240-22.080(17) does not provide a means for Commission acknowledgment as a result of an annual update report; and

b) KCPL did not request - and has not received - a waiver from 4 CSR 240-22.080(17);

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

Summary Item 2, Page 2-3: Until there is a legally recognized, lawful merger of KCPL and KCP&L Greater Missouri Operations Company ("GMO"), KCPL and GMO are required to perform and file separate Chapter 22 Electric Utility Resource Planning triennial compliance filings and annual update filings, unless a waiver is requested and received from the Commission respecting the requirements of Chapter 22 Electric Utility Resource Planning so as to allow joint company planning. No such waiver was requested;

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

Summary Item 3, Page 3: "KCPL's decision to not use minimization of the present worth of long-run utility costs as the only selection criterion in choosing its preferred

resource plan[5] results in additional requirements pursuant to : a) 4 CSR 240-22.010(2)(C), which requires the Company to "explicitly identify and, where possible, quantitatively analyze any other considerations which are critical to meeting the fundamental objective of the resource planning process, but which may constrain or limit the minimization of the present worth of expected utility costs;" and b) 4 CSR 240-22.070(1), which requires the company to "describe and document the process used to select the preferred resource plan, including the relative weights given to the various performance measures and the rationale used by utility decision-makers to judge the appropriate tradeoffs between competing planning objectives and between expected performance and risk." The 2013 Annual Report did not incorporate this additional analysis, narrative and documentation; thus, it is not compliant with 4 CSR 240-22.010(2)(C) and 4 CSR 240-22.070(1).

Response: In the 2014 Annual Update, KCP&L selected the Alternative Resource Plan with the lowest NPVRR and therefore no explanation is required for why the lowest NPVRR plan was not selected.

6.12.2 OFFICE OF THE PUBLIC COUNSEL

Office of the Public Counsel's Comments and Request for Hearing, August 21, 2013:

Item 1, Page 1: "KCPL's request for "acknowledgment" by the Commission of using a combined company planning process to perform its IRP is flawed and improper in several respects."

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

Item 2, Pages 1-2: "KCPL's request that the Commission acknowledge its joint company planning process is flawed"

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

Item 3, Pages 2-3: "The scope of IRP-related items that can be acknowledged under 4 CSR 240-22.080(17) is limited by the definition of "acknowledgement" in 4 CSR 240-22.020(1) which states "Acknowledgment is an action the commission may take with respect to the officially adopted resource acquisition strategy or any element of the resource acquisition strategy including the preferred resource plan."

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

Item 4, Page 3: "The request in this Annual Update for the Commission to acknowledge joint company planning for KCPL and GMO is also flawed because the provision in the IRP rules for acknowledgment is only applicable to triennial resource plan filings."

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

Item 5, Page 3: "Another flaw in the Company's request for the Commission to acknowledge a joint company planning process for KCPL and GMO stems from KCPL's failure to request a variance from, or waiver of, the requirement for utilities make a utility-specific Annual Update report filing pursuant to 4 CSR 240-22.080 (3)(B)."

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

Item 6, Page 4: "The request for the Commission to acknowledge joint company planning for KCPL and GMO is also flawed because KCPL is making the same request for acknowledgement of a combined company planning process in this Annual Update filing that was made in the Company's most recent triennial filing (Case No. EO-2012-0323), where this request was related to two of OPC's unresolved deficiencies that the Commission ordered GMO to address in this case." :

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

6.12.3 MISSOURI DEPARTMENT OF NATURAL RESOURCES

Page 1: "MDNR still has reservations with GMO's continued adherence to the jointly determined resource acquisition strategy":

Response: While KCP&L and GMO do engage in joint planning, both companies perform and file separate triennial compliance filings and annual update filings. KCP&L and GMO are not seeking acknowledgment in the 2014 Annual Update.

6.12.4 SIERRA CLUB

Response to submittal by Thomas Cmar on behalf of Sierra Club, August 21, 2013:

Item I, Pages 2-3: "KCP&L Has Not Adequately Justified Selection of a Preferred Resource Plan that Is Not the Least-Cost Plan."

Response: KCP&L clearly described and documented the reasoning for selecting an Alternative Resource Plan (ARP) that was not the lowest NPVRR ARP evaluated: From the June, 2013 filing: "The Preferred Plan was not the lowest cost plan from a Net Present Value of Revenue Requirement (NPVRR) perspective as a higher amount of DSM would reduce the NPVRR. KCP&L's Preferred Plan includes a modified RAP level of DSM for 2014, 2015 and 2016, followed by the RAP level starting in 2017. DSM for the Preferred Plan consists of a suite of fifteen Energy Efficiency programs, three Demand Response programs and two alternative rate plans that are based upon

Navigant's DSM Potential Study results for realistically achievable potential (RAP) DSM. The modification in years 2014, 2015, and 2016 was based on the measure list from the Potential Study but at a reduced level to reflect a lower level of DSM spending. The modified DSM plan is named MEEIA/RAP. This plan assumes that the same list of programs and the program plans from the potential study RAP level of DSM would be used, but the amount of capacity and energy savings would be reduced proportionately to reflect the reduced amount of savings that could be achieved with the lower level of spending. The DSM savings levels for this scenario are based on the cost per kWh from the RAP level of DSM in the Potential Study results.

KCP&L developed the MEEIA/RAP alternative to reduce the short-term rate impacts that would result from the full RAP DSM levels. Assuming KCP&L was approved for the same DSM cost recovery treatment as GMO was under its MEEIA settlement agreement, implementing the full RAP DSM plan in 2014 would increase retail rates by a projected 8.3% in 2016 (the first year new rates would be in effect under a 2013 KCP&L MEEIA filing). This increase does not reflect any other potential non-DSM related costs that would also go into effect in 2016. The MEEIA/RAP alternative reduces the rate impact to 6.3%."

Item B, Page 7: "KCP&L's Preferred Resource Plan is Based on Questionable, Unsupported Assumptions about Environmental Compliance Costs at Montrose Station.":

Response: Environmental expenditures: The estimated environmental retrofit cost for Montrose 2 and 3 is solely for compliance with the Mercury and Air Toxics Standards Rule (MATS). The estimated cost quoted in the Sierra Club response was also incorrect. Therefore, Sierra Club's statement "KCP&L is likely underestimating the future costs of environmental compliance at least with respect to the MATS rule, Clean Water Act effluent limitation guidelines, and Greenhouse Gas regulation" is inaccurate.

Item 1, Page 7: "MATS":

Response: Subsequent to filing the 2013 Annual Update, Montrose Station completed stack tests to determine baseline HCl emissions while burning coal from the Station's typical sources in the Power River Basin (PRB). As expected and broadly observed throughout industry, the test results indicate that "native" HCl emissions while burning PRB coal are generally less than half the MATS limit.

Additionally, the claim made by Sierra Club that KCP&L didn't take into account an increase in cost for low-chlorine coal is inapplicable because the station currently burns low-chlorine coal. Moreover, Sierra Club incorrectly stated that KCP&L ignored additional ACI system costs associated with the use of low-chlorine coal. Firstly, the VOM costs calculated by KCP&L for ACI are consistent with the use of brominated PAC, which is typically utilized for mercury capture when burning low-chlorine coal. Secondly, ACI operating costs are commonly greater for higher chlorine coals than for low-chlorine coals because higher chlorine fuels typically contain higher levels of sulfur, which is known to decrease activated carbon's ability to absorb mercury.

Item 2, Page 9: "Clean Water Act Effluent Limitation Guidelines:

Response: The impacts of this rule will not be known until the rule is finalized. KCP&L is estimating that Montrose Station would need to comply by 2021 but is currently expected to be retired by that time.

Item 3, Pages 12 - 14: "Greenhouse Gas Regulations":

Response: Regarding the potential for Greenhouse Gas Regulations - The impacts of rule CAA111(d) will not be known until after the rule is first proposed and ultimately finalized.

Item 4, Page 14: "CSAPR":

Response: In the event the rule is reinstated in part or whole, the Company will comply through a combination of trading allowances within or outside its system in addition to changes in operations as necessary. Due to the significant amount of announced coal unit retirements and reduced generation caused by MATS compliance

and the availability and economics of natural gas generation, it is anticipated adequate CSAPR allowances will likely be available to address any allowance trading by the Company for any shortfalls.

Item II, Page 15: “Choice of which plans to model”:

Response: KCP&L evaluated 23 ARPs alternatives varying DSM levels, retirement units, timing of retirement units, types of generation additions, and amounts of generation additions.

Item II, Pages 15 -16: “Carbon Price Assumptions”:

Response: The consensus of the six forecasts utilized in developing the CO_2 forecast for the 2013 Annual Update filing was that the mid case expectation was the year 2016 for Greenhouse gas regulations to commence and therefore CO_2 pricing was initiated in 2016.

Item II, Pages 17 -18: “Reporting of Off-System Sales”:

Response: The integrated modeling process generates the off-system sales quantities and revenues as part of the economic analysis of each scenario and alternative and the results are tracked and reported within the model. These are not specifically required by 4 CSR 240-22 to be exhibited in the filing report. There are thousands of model results and outputs that could be reported, and the nature of the IRP as a long-term planning process, limits the degree of detail that can be reasonably represented in filing report details. These details have been provided to parties via data requests, but are too voluminous to be included in the reporting document.

The issue raised regarding the allocation of these sales revenues has been addressed. They are in the model and roll-up into the revenue requirement. Whereas a rate case may allocate specific revenues and expenditures differently across customer classes, or allocate between ratepayers and shareholders, the IRP does not.

Item II, Page 18: “Accuracy of Assumed Cost of Wind Resources”:

Response: The All-In $/MWh for wind generation assumed ownership that included transmission upgrades and AFUDC. Also, it was assumed that the Production Tax Credit will not be renewed. Removing transmission upgrade costs and AFUDC, and adding in PTC would reduce the cost to below the U.S. DOE Lawrence Berkeley National Lab cost cited.

Item II, Page 19: “Unexplained Discrepancies between Combined and Individual Company Plans”:

Response: In the 2014 Annual Update, the GMO Preferred Plan has been identified as ACGGA and the KCP&L Preferred Plan has been identified as ABBKA. The expected value NPVRR of ACGGA is $11,050 ($mm) and the expected value NPVRR of ABBKA is $20,074 ($mm). The summation of the stand-alone Preferred Plan NPVRRs is $31,124 ($mm). The Combined-Company Alternative Resource Plan (ARP) that is the combination of ACGGA and ABBKA is ACCCA which has an expected value NPVRR of $31,086. Therefore, the Combined-Company ARP yields a lower NPVRR than the summation of the two stand-alone Preferred Plans.

SECTION 7: RESOURCE ACQUISITION STRATEGY

7.1 CORPORATE APPROVAL AND STATEMENT OF COMMITMENT

KANSAS CITY POWER & LIGHT COMPANY

INTEGRATED RESOURCE PLAN – 2014 ANNUAL UPDATE

CORPORATE APPROVAL AND STATEMENT OF COMMITMENT FOR

RESOURCE ACQUISITION STRATEGY

In accordance with Missouri Public Service Commission rules found in 4 CSR 240-22 and 4 CSR 240-22.080(3), Kansas City Power & Light Company ("KCP&L") now officially adopts for implementation the resource acquisition strategy contained in this Annual Update filing.

With the objective of providing the public with energy services that are safe, reliable, and efficient at just and reasonable rates, KCP&L is committed to the full implementation of the Resource Acquisition Strategy contained herein.

Kevin Noblet

Vice President Generation

Terry D. Bassham

President and Chief Executive Officer

7.2 2014 ANNUAL UPDATE PREFERRED PLAN

The 2014 Annual Update Preferred Plan for the 20-year planning period is shown in Table 51 below:

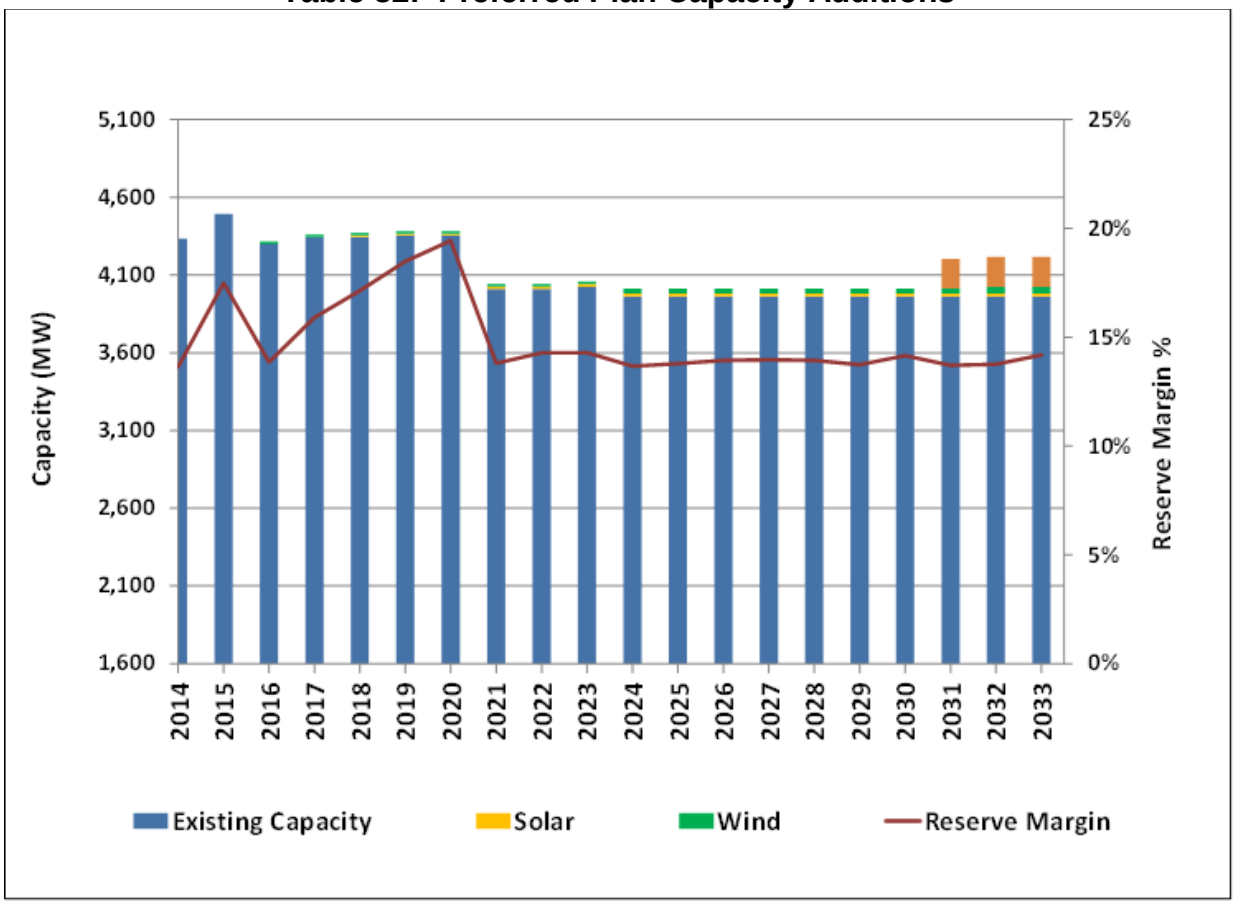
Table 51: 2014 Annual Update Preferred Plan

Year	CT's (MW)	Solar (MW)	Wind (MW)	DSM (MW)	Retire (MW)	Existing Capacity (MW)
2014	-			198		4,333
2015	-			198		4,492
2016	-		200	256	172	4,299
2017	-			290		4,344
2018	-	11		336		4,344
2019	-			381		4,354
2020	-			422		4,354
2021	-	6		460	345	4,009
2022	-			494		4,009
2023	-			522		4,024
2024	-		200	545		3,963
2025	-			549		3,963
2026	-			556		3,963
2027	-			560		3,963
2028	-			563		3,963
2029	-			563		3,963
2030	-			562		3,963
2031	193			561		3,963
2032	-		150	559		3,963
2033	-			557		3,963

7.2.1 PREFERRED PLAN COMPOSITION

Existing and new capacity additions for the 2014 Annual Update Preferred Plan are shown in Table 52 below:

Table 52: Preferred Plan Capacity Additions



Based upon current RPS rule requirements, the Preferred Plan includes 17 MW of solar additions and 550 MW of wind additions over the twenty-year planning period. It should be noted that the Missouri RPS-required solar and all wind additions could be obtained from power purchase agreements (PPA), purchasing of renewable energy credits (RECs), or utility ownership. It is anticipated that a large portion of the solar requirement will be met with solar RECs obtained from KCP&L retail customers that have received rebates for solar facility additions. A combustion turbine (CT) resource addition is included in 2031. KCP&L completed a MEEIA filing in January, 2014 that outlined DSM program offerings. DSM consists of a suite of six residential Energy

Efficiency programs, two commercial and industrial Energy Efficiency programs, one residential Demand Response program, one commercial and industrial Demand Response program, one residential and two commercial and industrial educational programs. The potential retirements of Montrose Unit 1 in 2016 and Montrose Units 2 and 3 in 2021 are partially attributed to current or proposed environmental regulations including Mercury and Air Toxics Standards Rule, Ozone National Ambient Air Quality Standards (NAAQS), PM NAAQS, SO_2 NAAQS Clean Water Act Section 316(a) and (b), Effluent Guidelines, and Coal Combustion Residuals Rule. These rules will be monitored by KCP&L prior to the projected retirement years to determine if changes to the Preferred Plan are warranted.

7.2.2 PREFERRED PLAN ECONOMIC IMPACT

The expected value of economic impact by year of the Preferred Plan is represented in Table 53 below. The economic impact of all plans can be found in Appendix D.

Table 53: Preferred Plan Economic Impact ** Highly Confidential **

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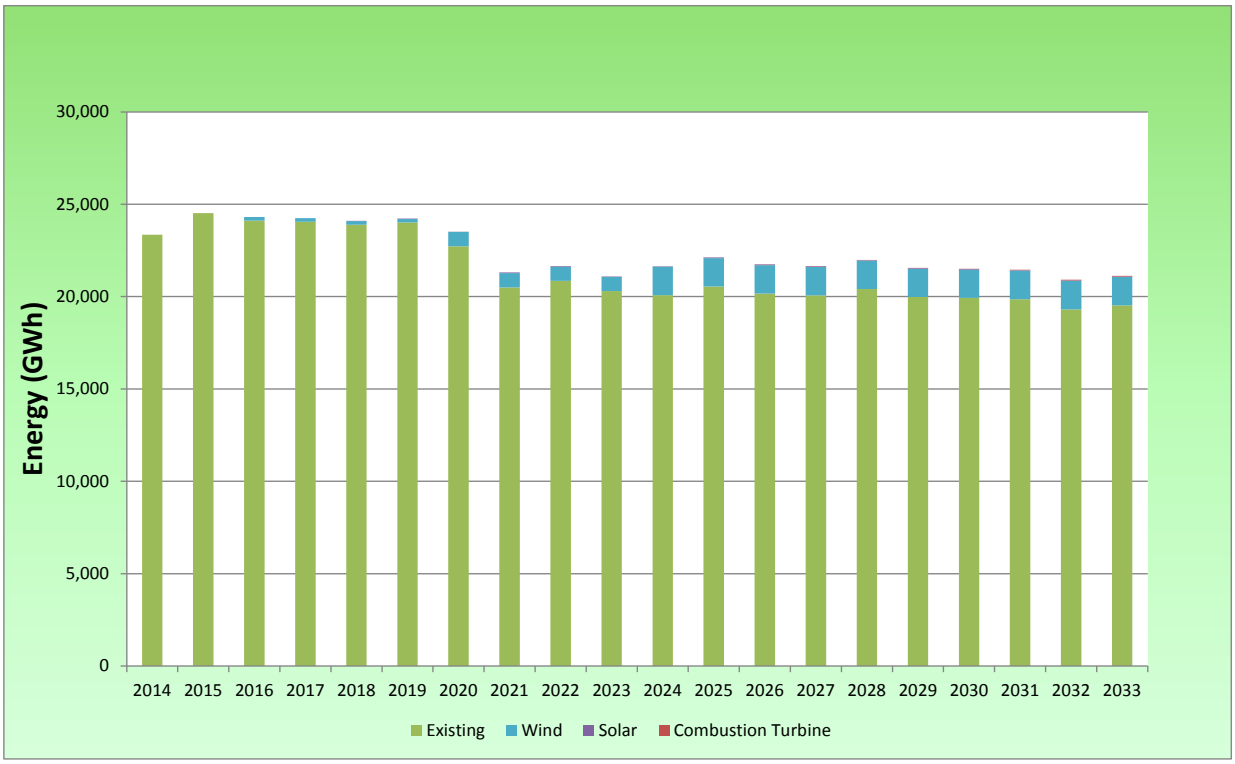
7.2.3 PREFERRED PLAN ANNUAL GENERATION

The expected value of annual generation for the Preferred Plan is shown in Table 54 below. The annual generation for all plans is included in Appendix C.

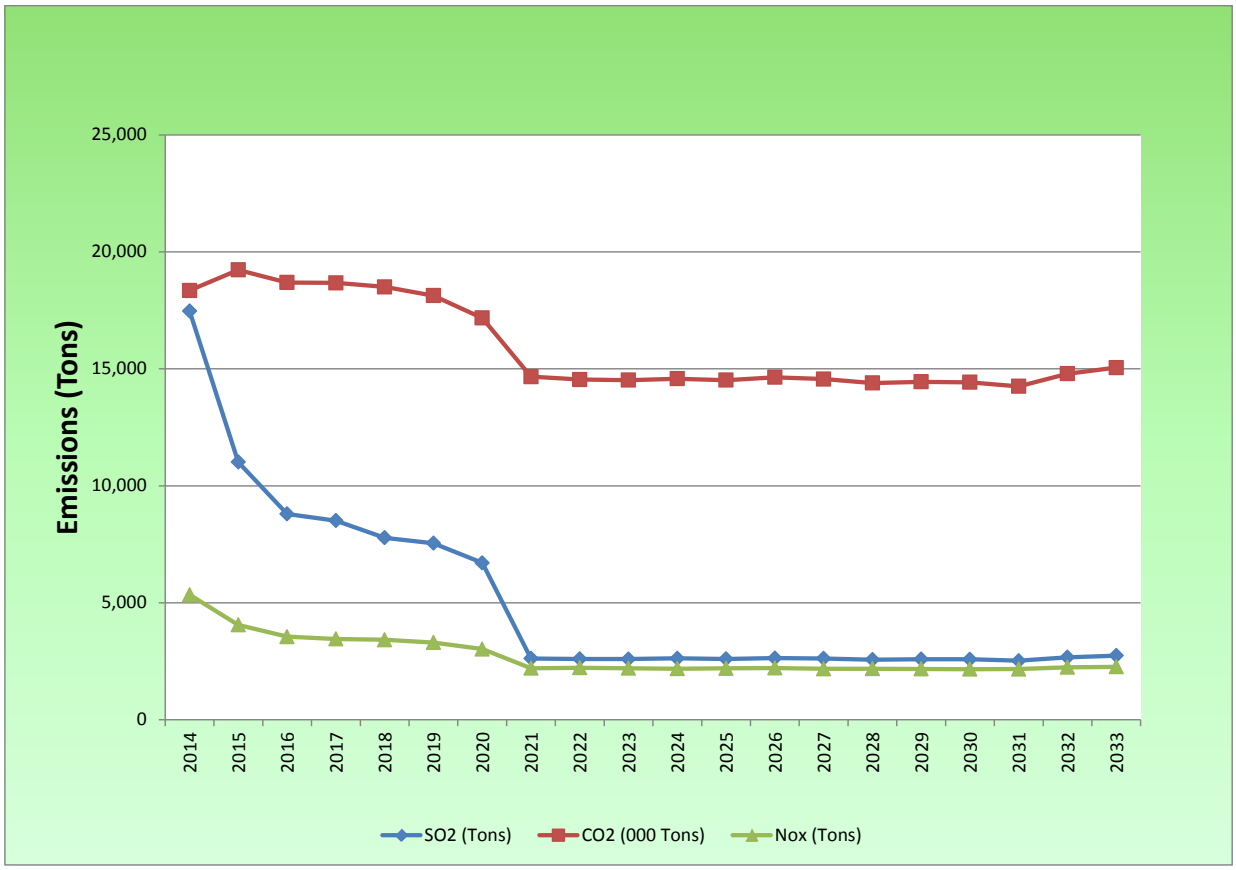
Table 54: Preferred Plan Annual Generation



7.2.4 PREFERRED PLAN ANNUAL EMISSIONS

The expected value of annual emissions for the Preferred Plan are shown in Table 55 below. The annual generation for all plans is included in Appendix C.

Table 55: Preferred Plan Annual Emissions



7.3 CRITICAL UNCERTAIN FACTORS

The integrated analysis performed for the 2014 Annual Update utilized the same critical uncertain factors as the 2013 Annual Update filing. The critical uncertain factors are load, natural gas prices and CO_2 prices. Assumptions regarding the values and ranges of these inputs are covered in the relevant sections that discuss load, gas and CO_2 prices. Table 56 below represents the three Critical Uncertain Factors and the 27 endpoint scenarios that were developed from them.

Table 56: Critical Uncertain Factor Tree

Endpoint	Load Growth	Natural Gas	CO_2	Endpoint Probability
1	High	High	High	1.6%
2	High	High	Mid	3.1%
3	High	High	Low	1.6%
4	High	Mid	High	3.1%
5	High	Mid	Mid	6.3%
6	High	Mid	Low	3.1%
7	High	Low	High	1.6%
8	High	Low	Mid	3.1%
9	High	Low	Low	1.6%
10	Mid	High	High	3.1%
11	Mid	High	Mid	6.3%
12	Mid	High	Low	3.1%
13	Mid	Mid	High	6.3%
14	Mid	Mid	Mid	12.5%
15	Mid	Mid	Low	6.3%
16	Mid	Low	High	3.1%
17	Mid	Low	Mid	6.3%
18	Mid	Low	Low	3.1%
19	Low	High	High	1.6%
20	Low	High	Mid	3.1%
21	Low	High	Low	1.6%
22	Low	Mid	High	3.1%
23	Low	Mid	Mid	6.3%
24	Low	Mid	Low	3.1%
25	Low	Low	High	1.6%
26	Low	Low	Mid	3.1%
27	Low	Low	Low	1.6%

The company performed an analysis to address the impact of the critical uncertain factors on Preferred Plan selection. This analysis ranks how plans perform relative to

the representation of the twenty-seven endpoint tree. The results of the analysis are represented in the following tables.

7.3.1 CRITICAL UNCERTAIN FACTOR – HIGH LOAD GROWTH

	HIGH LOAD GROWTH																	
	HIGH CO2		MID CO2		LOW CO2			HIGH CO2		MID CO2		LOW CO2			HIGH CO2		MID CO2		LOW CO2	
	Endpoint 1		Endpoint 2		Endpoint 3			Endpoint 4		Endpoint 5		Endpoint 6			Endpoint 7		Endpoint 8		Endpoint 9	
HIGH GAS	PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR	MID GAS	PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR	LOW GAS	PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR
	ABBKW	22,422	ABBKA	19,831	ABBKA	17,886		ABBKW	22,622	ABBKA	20,434	ABBKA	18,525		AHFKB	22,431	ABBKA	20,729	ABBKA	19,163
	ABBKA	22,479	ABDKA	19,835	ABCKA	17,886		AHFKB	22,623	ABDKA	20,450	ABDKA	18,540		AHFKC	22,457	AHFKA	20,748	ABDKA	19,190
	ABDKA	22,486	ABCKA	19,853	ABDKA	17,889		AHFKC	22,643	ABCKA	20,473	ABCKA	18,541		AHFKA	22,527	ABDKA	20,756	ABCKA	19,195
	ABCKA	22,527	ABEKA	19,857	ABEKA	17,890		ABBKA	22,649	ABEKA	20,489	ABEKA	18,557		ABBKW	22,543	AHFKC	20,758	ABEKA	19,222
	ABEKA	22,534	ABBKW	19,863	ACBKA	17,952		ABDKA	22,668	ABBKW	20,502	ABBKW	18,643		ABBKA	22,543	AHFKB	20,766	AHFKA	19,279
	AHFKC	22,568	ACBKA	20,001	ACDKA	17,956		AHFKA	22,696	AHFKA	20,544	ACBKA	18,661		ABDKA	22,572	ABCKA	20,778	ABGKA	19,296
	AHFKB	22,572	ACDKA	20,006	ACEKA	17,960		ABCKA	22,702	AHFKC	20,579	ACDKA	18,677		ABCKA	22,598	ABEKA	20,806	ABBKW	19,317
	AHFKA	22,595	CBBKA	20,017	ABBKW	17,968		ABEKA	22,721	ABGKA	20,602	ACEKA	18,688		ABEKA	22,627	ABBKW	20,820	AHFKC	19,325
	CBBKA	22,626	ACEKA	20,019	ADGKA	18,058		ABGKA	22,799	AHFKB	20,623	ABGKA	18,704		ABGKA	22,650	ABGKA	20,854	AHFKB	19,372
	ABGKA	22,670	ABGKA	20,043	ADHKA	18,062		CBBKA	22,810	CBBKA	20,640	CBBKA	18,751		CBBKA	22,721	CBBKA	20,948	ACBKA	19,377
	ACBKA	22,712	AHFKA	20,171	CBBKA	18,093		ACBKA	22,887	ACBKA	20,657	ADGKA	18,815		ACBKA	22,786	ACBKA	20,964	ACDKA	19,405
	ACDKA	22,719	AHFKC	20,173	ABGKA	18,111		ACDKA	22,906	ACDKA	20,674	ADHKA	18,831		ACDKA	22,815	ACDKA	20,992	CBBKA	19,409
	ACEKA	22,742	ADGKA	20,178	AAAKA	18,225		ACEKA	22,931	ACEKA	20,693	XBBKA	18,884		ACEKA	22,840	ACEKA	21,016	ACEKA	19,421
	DBBKA	22,867	ADHKA	20,183	XAAKA	18,274		DBBKA	23,061	ADGKA	20,868	AHFKA	18,888		DBBKA	22,980	XBBKA	21,113	XBBKA	19,439
	ADGKA	22,930	AHFKB	20,216	XBBKA	18,329		ADGKA	23,109	XBBKA	20,878	AHFKC	18,890		ADGKA	23,007	ADGKA	21,184	ADGKA	19,583
	ADHKA	22,938	DBBKA	20,283	DBBKA	18,371		ADHKA	23,128	ADHKA	20,885	AHFKB	18,930		ADHKA	23,037	ADHKA	21,212	ADHKA	19,610
	BBBKA	23,109	XBBKA	20,355	AHFKC	18,436		XBBKA	23,278	DBBKA	20,919	XAAKA	19,015		XBBKA	23,085	DBBKA	21,237	DBBKA	19,715
	XBBKA	23,168	AAAKA	20,405	AHFKB	18,471		BBBKA	23,314	AAAKA	21,142	AAAKA	19,039		BBBKA	23,240	AAAKA	21,480	XAAKA	19,765
	AAAKA	23,201	BBBKA	20,548	AHFKA	18,483		AAAKA	23,397	BBBKA	21,197	DBBKA	19,044		AAAKA	23,308	XAAKA	21,494	AAAKA	19,863
	XAAKA	23,519	XAAKA	20,553	BBBKA	18,650		XAAKA	23,656	XAAKA	21,213	BBBKA	19,335		XAAKA	23,514	BBBKA	21,525	BBBKA	20,018

7.3.2 CRITICAL UNCERTAIN FACTOR – LOW LOAD GROWTH

LOW LOAD GROWTH																								
	HIGH CO2			MID CO2		LOW CO2			HIGH CO2			MID CO2		LOW CO2			HIGH CO2			MID CO2		LOW CO2	
		Endpoint 19		Endpoint 20		Endpoint 21				Endpoint 22		Endpoint 23		Endpoint 24				Endpoint 25		Endpoint 26		Endpoint 27	
	PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR		PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR		PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR	
HIGH GAS	ABBKW	21,327	ABBKA	19,002	ABBKA	17,200	MID GAS	ABBKW	21,623	ABBKA	19,730	ABBKA	17,966	LOW GAS	AHFKB	21,542	ABBKA	20,111	ABBKA	18,728			
	ABBKA	21,384	ABDKA	19,010	ABCKA	17,206		AHFKB	21,625	ABDKA	19,748	ABDKA	17,984		AHFKC	21,561	AHFKA	20,129	ABDKA	18,756			
	ABDKA	21,395	ABCKA	19,027	ABDKA	17,208		AHFKC	21,645	ABCKA	19,769	ABCKA	17,985		AHFKA	21,611	AHFKC	20,138	ABCKA	18,762			
	ABCKA	21,432	ABEKA	19,035	ABEKA	17,213		ABBKA	21,650	ABEKA	19,788	ABEKA	18,003		ABBKA	21,624	ABDKA	20,140	ABEKA	18,790			
	ABEKA	21,443	ABBKW	19,040	ACBKA	17,283		ABDKA	21,670	ABBKW	19,798	ABBKW	18,093		ABBKW	21,631	AHFKB	20,145	AHFKA	18,838			
	AHFKC	21,468	ACBKA	19,177	ACDKA	17,291		AHFKA	21,693	AHFKA	19,835	ACBKA	18,111		ABDKA	21,654	ABCKA	20,161	ABGKA	18,860			
	AHFKB	21,472	ACDKA	19,186	ABBKW	17,298		ABCKA	21,703	AHFKC	19,871	ACDKA	18,130		ABCKA	21,679	ABEKA	20,190	AHFKC	18,885			
	AHFKA	21,495	CBBKA	19,189	ACEKA	17,298		ABEKA	21,724	ABGKA	19,894	ABGKA	18,139		ABEKA	21,709	ABBKW	20,202	ABBKW	18,885			
	CBBKA	21,531	ACEKA	19,200	CBBKA	17,409		ABGKA	21,797	AHFKB	19,916	ACEKA	18,142		ABGKA	21,731	ABGKA	20,235	AHFKB	18,934			
	ABGKA	21,571	ABGKA	19,207	ADGKA	17,412		CBBKA	21,812	CBBKA	19,935	CBBKA	18,193		CBBKA	21,803	CBBKA	20,331	ACBKA	18,944			
	ACBKA	21,617	AHFKA	19,328	ABGKA	17,417		ACBKA	21,887	ACBKA	19,953	ADGKA	18,277		ACBKA	21,866	ACBKA	20,347	ACDKA	18,973			
	ACDKA	21,628	AHFKC	19,331	ADHKA	17,420		ACDKA	21,909	ACDKA	19,972	ADHKA	18,296		ACDKA	21,897	ACDKA	20,376	CBBKA	18,975			
	ACEKA	21,651	ADGKA	19,360	AAAKA	17,604		ACEKA	21,933	ACEKA	19,992	AHFKA	18,310		ACEKA	21,922	ACEKA	20,400	ACEKA	18,990			
	DBBKA	21,772	ADHKA	19,369	XAAKA	17,618		DBBKA	22,063	ADGKA	20,166	AHFKC	18,313		DBBKA	22,062	XBBKA	20,497	XBBKA	19,002			
	ADGKA	21,835	AHFKB	19,374	XBBKA	17,627		ADGKA	22,109	XBBKA	20,173	XBBKA	18,315		ADGKA	22,089	ADGKA	20,567	ADGKA	19,151			
	ADHKA	21,847	DBBKA	19,456	DBBKA	17,691		ADHKA	22,130	ADHKA	20,185	AHFKB	18,354		ADHKA	22,119	ADHKA	20,596	ADHKA	19,180			
	BBBKA	22,019	XBBKA	19,520	AHFKC	17,719		XBBKA	22,275	DBBKA	20,214	XAAKA	18,471		XBBKA	22,163	DBBKA	20,619	DBBKA	19,280			
	XBBKA	22,073	AAAKA	19,599	AHFKB	17,755		BBBKA	22,318	AAAKA	20,444	DBBKA	18,487		BBBKA	22,324	AAAKA	20,865	XAAKA	19,333			
	AAAKA	22,111	BBBKA	19,729	AHFKA	17,764		AAAKA	22,400	BBBKA	20,498	AAAKA	18,516		AAAKA	22,390	XAAKA	20,879	AAAKA	19,436			
	XAAKA	22,428	XAAKA	19,733	BBBKA	17,977		XAAKA	22,655	XAAKA	20,514	BBBKA	18,785		XAAKA	22,585	BBBKA	20,909	BBBKA	19,587			

7.3.3 CRITICAL UNCERTAIN FACTOR – HIGH NATURAL GAS PRICES

	HIGH NATURAL GAS PRICES																					
	HIGH CO2		MID CO2		LOW CO2			HIGH CO2		MID CO2		LOW CO2			HIGH CO2		MID CO2		LOW CO2		
		Endpoint 1		Endpoint 2		Endpoint 3			Endpoint 10		Endpoint 11		Endpoint 12			Endpoint 19		Endpoint 20		Endpoint 21	
	PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR		PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR		PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR	
HIGH LOAD	ABBKW	22,422	ABBKA	19,831	ABBKA	17,886	MID LOAD	ABBKW	21,856	ABBKA	19,401	ABBKA	17,527	LOW LOAD	ABBKW	21,327	ABBKA	19,002	ABBKA	17,200	
	ABBKA	22,479	ABDKA	19,835	ABCKA	17,886		ABBKA	21,913	ABDKA	19,407	ABCKA	17,530		ABBKA	21,384	ABDKA	19,010	ABCKA	17,206	
	ABDKA	22,486	ABCKA	19,853	ABDKA	17,889		ABDKA	21,922	ABCKA	19,424	ABDKA	17,533		ABDKA	21,395	ABCKA	19,027	ABDKA	17,208	
	ABCKA	22,527	ABEKA	19,857	ABEKA	17,890		ABCKA	21,961	ABEKA	19,430	ABEKA	17,535		ABCKA	21,432	ABEKA	19,035	ABEKA	17,213	
	ABEKA	22,534	ABBKW	19,863	ACBKA	17,952		ABEKA	21,970	ABBKW	19,436	ACBKA	17,601		ABEKA	21,443	ABBKW	19,040	ACBKA	17,283	
	AHFKC	22,568	ACBKA	20,001	ACDKA	17,956		AHFKC	22,000	ACBKA	19,573	ACDKA	17,607		AHFKC	21,468	ACBKA	19,177	ACDKA	17,291	
	AHFKB	22,572	ACDKA	20,006	ACEKA	17,960		AHFKB	22,004	ACDKA	19,580	ACEKA	17,612		AHFKB	21,472	ACDKA	19,186	ABBKW	17,298	
	AHFKA	22,595	CBBKA	20,017	ABBKW	17,968		AHFKA	22,027	CBBKA	19,588	ABBKW	17,616		AHFKA	21,495	CBBKA	19,189	ACEKA	17,298	
	CBBKA	22,626	ACEKA	20,019	ADGKA	18,058		CBBKA	22,060	ACEKA	19,593	ADGKA	17,717		CBBKA	21,531	ACEKA	19,200	CBBKA	17,409	
	ABGKA	22,670	ABGKA	20,043	ADHKA	18,062		ABGKA	22,103	ABGKA	19,611	ADHKA	17,723		ABGKA	21,571	ABGKA	19,207	ADGKA	17,412	
	ACBKA	22,712	AHFKA	20,171	CBBKA	18,093		ACBKA	22,146	AHFKA	19,737	CBBKA	17,736		ACBKA	21,617	AHFKA	19,328	ABGKA	17,417	
	ACDKA	22,719	AHFKC	20,173	ABGKA	18,111		ACDKA	22,155	AHFKC	19,738	ABGKA	17,749		ACDKA	21,628	AHFKC	19,331	ADHKA	17,420	
	ACEKA	22,742	ADGKA	20,178	AAAKA	18,225		ACEKA	22,178	ADGKA	19,753	AAAKA	17,896		ACEKA	21,651	ADGKA	19,360	AAAKA	17,604	
	DBBKA	22,867	ADHKA	20,183	XAAKA	18,274		DBBKA	22,301	ADHKA	19,760	XAAKA	17,930		DBBKA	21,772	ADHKA	19,369	XAAKA	17,618	
	ADGKA	22,930	AHFKB	20,216	XBBKA	18,329		ADGKA	22,364	AHFKB	19,781	XBBKA	17,964		ADGKA	21,835	AHFKB	19,374	XBBKA	17,627	
	ADHKA	22,938	DBBKA	20,283	DBBKA	18,371		ADHKA	22,374	DBBKA	19,854	DBBKA	18,016		ADHKA	21,847	DBBKA	19,456	DBBKA	17,691	
	BBBKA	23,109	XBBKA	20,355	AHFKC	18,436		BBBKA	22,543	XBBKA	19,923	AHFKC	18,065		BBBKA	22,019	XBBKA	19,520	AHFKC	17,719	
	XBBKA	23,168	AAAKA	20,405	AHFKB	18,471		XBBKA	22,603	AAAKA	19,985	AHFKB	18,100		XBBKA	22,073	AAAKA	19,599	AHFKB	17,755	
	AAAKA	23,201	BBBKA	20,548	AHFKA	18,483		AAAKA	22,638	BBBKA	20,120	AHFKA	18,112		AAAKA	22,111	BBBKA	19,729	AHFKA	17,764	
	XAAKA	23,519	XAAKA	20,553	BBBKA	18,650		XAAKA	22,956	XAAKA	20,128	BBBKA	18,295		XAAKA	22,428	XAAKA	19,733	BBBKA	17,977	

7.3.4 CRITICAL UNCERTAIN FACTOR – LOW NATURAL GAS PRICES

	LOW NATURAL GAS PRICES																	
	HIGH CO2		MID CO2		LOW CO2			HIGH CO2		MID CO2		LOW CO2			HIGH CO2		MID CO2		LOW CO2	
		Endpoint 7		Endpoint 8		Endpoint 9			Endpoint 16		Endpoint 17		Endpoint 18			Endpoint 25		Endpoint 26		Endpoint 27
	PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR		PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR		PLAN	NPVRR	PLAN	NPVRR	PLAN	NPVRR
HIGH LOAD	AHFKB	22,431	ABBKA	20,729	ABBKA	19,163	MID LOAD	AHFKB	21,970	ABBKA	20,410	ABBKA	18,938	LOW LOAD	AHFKB	21,542	ABBKA	20,111	ABBKA	18,728
	AHFKC	22,457	AHFKA	20,748	ABDKA	19,190		AHFKC	21,990	AHFKA	20,429	ABDKA	18,965		AHFKC	21,561	AHFKA	20,129	ABDKA	18,756
	AHFKA	22,527	ABDKA	20,756	ABCKA	19,195		AHFKA	22,051	ABDKA	20,438	ABCKA	18,971		AHFKA	21,611	AHFKC	20,138	ABCKA	18,762
	ABBKW	22,543	AHFKC	20,758	ABEKA	19,222		ABBKA	22,067	AHFKC	20,439	ABEKA	18,998		ABBKA	21,624	ABDKA	20,140	ABEKA	18,790
	ABBKA	22,543	AHFKB	20,766	AHFKA	19,279		ABBKW	22,072	AHFKB	20,446	AHFKA	19,052		ABBKW	21,631	AHFKB	20,145	AHFKA	18,838
	ABDKA	22,572	ABCKA	20,778	ABGKA	19,296		ABDKA	22,097	ABCKA	20,460	ABGKA	19,071		ABDKA	21,654	ABCKA	20,161	ABGKA	18,860
	ABCKA	22,598	ABEKA	20,806	ABBKW	19,317		ABCKA	22,122	ABEKA	20,488	ABBKW	19,093		ABCKA	21,679	ABEKA	20,190	AHFKC	18,885
	ABEKA	22,627	ABBKW	20,820	AHFKC	19,325		ABEKA	22,151	ABBKW	20,501	AHFKC	19,097		ABEKA	21,709	ABBKW	20,202	ABBKW	18,885
	ABGKA	22,650	ABGKA	20,854	AHFKB	19,372		ABGKA	22,174	ABGKA	20,535	AHFKB	19,145		ABGKA	21,731	ABGKA	20,235	AHFKB	18,934
	CBBKA	22,721	CBBKA	20,948	ACBKA	19,377		CBBKA	22,247	CBBKA	20,630	ACBKA	19,153		CBBKA	21,803	CBBKA	20,331	ACBKA	18,944
	ACBKA	22,786	ACBKA	20,964	ACDKA	19,405		ACBKA	22,309	ACBKA	20,646	ACDKA	19,181		ACBKA	21,866	ACBKA	20,347	ACDKA	18,973
	ACDKA	22,815	ACDKA	20,992	CBBKA	19,409		ACDKA	22,339	ACDKA	20,674	CBBKA	19,184		ACDKA	21,897	ACDKA	20,376	CBBKA	18,975
	ACEKA	22,840	ACEKA	21,016	ACEKA	19,421		ACEKA	22,364	ACEKA	20,698	ACEKA	19,198		ACEKA	21,922	ACEKA	20,400	ACEKA	18,990
	DBBKA	22,980	XBBKA	21,113	XBBKA	19,439		DBBKA	22,506	XBBKA	20,795	XBBKA	19,213		DBBKA	22,062	XBBKA	20,497	XBBKA	19,002
	ADGKA	23,007	ADGKA	21,184	ADGKA	19,583		ADGKA	22,532	ADGKA	20,865	ADGKA	19,359		ADGKA	22,089	ADGKA	20,567	ADGKA	19,151
	ADHKA	23,037	ADHKA	21,212	ADHKA	19,610		ADHKA	22,562	ADHKA	20,894	ADHKA	19,387		ADHKA	22,119	ADHKA	20,596	ADHKA	19,180
	XBBKA	23,085	DBBKA	21,237	DBBKA	19,715		XBBKA	22,606	DBBKA	20,918	DBBKA	19,490		XBBKA	22,163	DBBKA	20,619	DBBKA	19,280
	BBBKA	23,240	AAAKA	21,480	XAAKA	19,765		BBBKA	22,765	AAAKA	21,162	XAAKA	19,541		BBBKA	22,324	AAAKA	20,865	XAAKA	19,333
	AAAKA	23,308	XAAKA	21,494	AAAKA	19,863		AAAKA	22,832	XAAKA	21,177	AAAKA	19,641		AAAKA	22,390	XAAKA	20,879	AAAKA	19,436
	XAAKA	23,514	BBBKA	21,525	BBBKA	20,018		XAAKA	23,032	BBBKA	21,206	BBBKA	19,794		XAAKA	22,585	BBBKA	20,909	BBBKA	19,587

7.3.5 CRITICAL UNCERTAIN FACTOR – HIGH CO_2

HIGH CO_2 CREDIT PRICES

	HIGH GAS		MID GAS		LOW GAS	
HIGH LOAD	PLAN	Endpoint 1 NPVRR	PLAN	Endpoint 4 NPVRR	PLAN	Endpoint 7 NPVRR
	ABBKW	22,422	ABBKW	22,622	AHFKB	22,431
	ABBKA	22,479	AHFKB	22,623	AHFKC	22,457
	ABDKA	22,486	AHFKC	22,643	AHFKA	22,527
	ABCKA	22,527	ABBKA	22,649	ABBKW	22,543
	ABEKA	22,534	ABDKA	22,668	ABBKA	22,543
	AHFKC	22,568	AHFKA	22,696	ABDKA	22,572
	AHFKB	22,572	ABCKA	22,702	ABCKA	22,598
	AHFKA	22,595	ABEKA	22,721	ABEKA	22,627
	CBBKA	22,626	ABGKA	22,799	ABGKA	22,650
	ABGKA	22,670	CBBKA	22,810	CBBKA	22,721
	ACBKA	22,712	ACBKA	22,887	ACBKA	22,786
	ACDKA	22,719	ACDKA	22,906	ACDKA	22,815
	ACEKA	22,742	ACEKA	22,931	ACEKA	22,840
	DBBKA	22,867	DBBKA	23,061	DBBKA	22,980
	ADGKA	22,930	ADGKA	23,109	ADGKA	23,007
	ADHKA	22,938	ADHKA	23,128	ADHKA	23,037
	BBBKA	23,109	XBBKA	23,278	XBBKA	23,085
	XBBKA	23,168	BBBKA	23,314	BBBKA	23,240
	AAAKA	23,201	AAAKA	23,397	AAAKA	23,308
	XAAKA	23,519	XAAKA	23,656	XAAKA	23,514

	HIGH GAS		MID GAS		LOW GAS	
MID LOAD	PLAN	Endpoint 10 NPVRR	PLAN	Endpoint 13 NPVRR	PLAN	Endpoint 16 NPVRR
	ABBKW	21,856	ABBKW	22,105	AHFKB	21,970
	ABBKA	21,913	AHFKB	22,108	AHFKC	21,990
	ABDKA	21,922	AHFKC	22,127	AHFKA	22,051
	ABCKA	21,961	ABBKA	22,132	ABBKA	22,067
	ABEKA	21,970	ABDKA	22,152	ABBKW	22,072
	AHFKC	22,000	AHFKA	22,178	ABDKA	22,097
	AHFKB	22,004	ABCKA	22,186	ABCKA	22,122
	AHFKA	22,027	ABEKA	22,205	ABEKA	22,151
	CBBKA	22,060	ABGKA	22,281	ABGKA	22,174
	ABGKA	22,103	CBBKA	22,295	CBBKA	22,247
	ACBKA	22,146	ACBKA	22,370	ACBKA	22,309
	ACDKA	22,155	ACDKA	22,390	ACDKA	22,339
	ACEKA	22,178	ACEKA	22,415	ACEKA	22,364
	DBBKA	22,301	DBBKA	22,546	DBBKA	22,506
	ADGKA	22,364	ADGKA	22,592	ADGKA	22,532
	ADHKA	22,374	ADHKA	22,612	ADHKA	22,562
	BBBKA	22,543	XBBKA	22,760	XBBKA	22,606
	XBBKA	22,603	BBBKA	22,797	BBBKA	22,765
	AAAKA	22,638	AAAKA	22,882	AAAKA	22,832
	XAAKA	22,956	XAAKA	23,140	XAAKA	23,032

	HIGH GAS		MID GAS		LOW GAS	
LOW LOAD	PLAN	Endpoint 19 NPVRR	PLAN	Endpoint 22 NPVRR	PLAN	Endpoint 25 NPVRR
	ABBKW	21,327	ABBKW	21,623	AHFKB	21,542
	ABBKA	21,384	AHFKB	21,625	AHFKC	21,561
	ABDKA	21,395	AHFKC	21,645	AHFKA	21,611
	ABCKA	21,432	ABBKA	21,650	ABBKA	21,624
	ABEKA	21,443	ABDKA	21,670	ABBKW	21,631
	AHFKC	21,468	AHFKA	21,693	ABDKA	21,654
	AHFKB	21,472	ABCKA	21,703	ABCKA	21,679
	AHFKA	21,495	ABEKA	21,724	ABEKA	21,709
	CBBKA	21,531	ABGKA	21,797	ABGKA	21,731
	ABGKA	21,571	CBBKA	21,812	CBBKA	21,803
	ACBKA	21,617	ACBKA	21,887	ACBKA	21,866
	ACDKA	21,628	ACDKA	21,909	ACDKA	21,897
	ACEKA	21,651	ACEKA	21,933	ACEKA	21,922
	DBBKA	21,772	DBBKA	22,063	DBBKA	22,062
	ADGKA	21,835	ADGKA	22,109	ADGKA	22,089
	ADHKA	21,847	ADHKA	22,130	ADHKA	22,119
	BBBKA	22,019	XBBKA	22,275	XBBKA	22,163
	XBBKA	22,073	BBBKA	22,318	BBBKA	22,324
	AAAKA	22,111	AAAKA	22,400	AAAKA	22,390
	XAAKA	22,428	XAAKA	22,655	XAAKA	22,585

7.3.6 CRITICAL UNCERTAIN FACTOR – LOW CO_2

LOW CO_2 CREDIT PRICES

	HIGH GAS		MID GAS		LOW GAS	
HIGH LOAD	PLAN	Endpoint 3 NPVRR	PLAN	Endpoint 6 NPVRR	PLAN	Endpoint 9 NPVRR
	ABBKA	17,886	ABBKA	18,525	ABBKA	19,163
	ABCKA	17,886	ABDKA	18,540	ABDKA	19,190
	ABDKA	17,889	ABCKA	18,541	ABCKA	19,195
	ABEKA	17,890	ABEKA	18,557	ABEKA	19,222
	ACBKA	17,952	ABBKW	18,643	AHFKA	19,279
	ACDKA	17,956	ACBKA	18,661	ABGKA	19,296
	ACEKA	17,960	ACDKA	18,677	ABBKW	19,317
	ABBKW	17,968	ACEKA	18,688	AHFKC	19,325
	ADGKA	18,058	ABGKA	18,704	AHFKB	19,372
	ADHKA	18,062	CBBKA	18,751	ACBKA	19,377
	CBBKA	18,093	ADGKA	18,815	ACDKA	19,405
	ABGKA	18,111	ADHKA	18,831	CBBKA	19,409
	AAAKA	18,225	XBBKA	18,884	ACEKA	19,421
	XAAKA	18,274	AHFKA	18,888	XBBKA	19,439
	XBBKA	18,329	AHFKC	18,890	ADGKA	19,583
	DBBKA	18,371	AHFKB	18,930	ADHKA	19,610
	AHFKC	18,436	XAAKA	19,015	DBBKA	19,715
	AHFKB	18,471	AAAKA	19,039	XAAKA	19,765
	AHFKA	18,483	DBBKA	19,044	AAAKA	19,863
	BBBKA	18,650	BBBKA	19,335	BBBKA	20,018

	HIGH GAS		MID GAS		LOW GAS	
MID LOAD	PLAN	Endpoint 12 NPVRR	PLAN	Endpoint 15 NPVRR	PLAN	Endpoint 18 NPVRR
	ABBKA	17,527	ABBKA	18,233	ABBKA	18,938
	ABCKA	17,530	ABDKA	18,250	ABDKA	18,965
	ABDKA	17,533	ABCKA	18,251	ABCKA	18,971
	ABEKA	17,535	ABEKA	18,268	ABEKA	18,998
	ACBKA	17,601	ABBKW	18,356	AHFKA	19,052
	ACDKA	17,607	ACBKA	18,374	ABGKA	19,071
	ACEKA	17,612	ACDKA	18,391	ABBKW	19,093
	ABBKW	17,616	ACEKA	18,402	AHFKC	19,097
	ADGKA	17,717	ABGKA	18,410	AHFKB	19,145
	ADHKA	17,723	CBBKA	18,461	ACBKA	19,153
	CBBKA	17,736	ADGKA	18,533	ACDKA	19,181
	ABGKA	17,749	ADHKA	18,551	CBBKA	19,184
	AAAKA	17,896	XBBKA	18,589	ACEKA	19,198
	XAAKA	17,930	AHFKA	18,590	XBBKA	19,213
	XBBKA	17,964	AHFKC	18,591	ADGKA	19,359
	DBBKA	18,016	AHFKB	18,632	ADHKA	19,387
	AHFKC	18,065	XAAKA	18,731	DBBKA	19,490
	AHFKB	18,100	DBBKA	18,754	XAAKA	19,541
	AHFKA	18,112	AAAKA	18,764	AAAKA	19,641
	BBBKA	18,295	BBBKA	19,046	BBBKA	19,794

	HIGH GAS		MID GAS		LOW GAS	
LOW LOAD	PLAN	Endpoint 21 NPVRR	PLAN	Endpoint 24 NPVRR	PLAN	Endpoint 27 NPVRR
	ABBKA	17,200	ABBKA	17,966	ABBKA	18,728
	ABCKA	17,206	ABDKA	17,984	ABDKA	18,756
	ABDKA	17,208	ABCKA	17,985	ABCKA	18,762
	ABEKA	17,213	ABEKA	18,003	ABEKA	18,790
	ACBKA	17,283	ABBKW	18,093	AHFKA	18,838
	ACDKA	17,291	ACBKA	18,111	ABGKA	18,860
	ABBKW	17,298	ACDKA	18,130	AHFKC	18,885
	ACEKA	17,298	ABGKA	18,139	ABBKW	18,885
	CBBKA	17,409	ACEKA	18,142	AHFKB	18,934
	ADGKA	17,412	CBBKA	18,193	ACBKA	18,944
	ABGKA	17,417	ADGKA	18,277	ACDKA	18,973
	ADHKA	17,420	ADHKA	18,296	CBBKA	18,975
	AAAKA	17,604	AHFKA	18,310	ACEKA	18,990
	XAAKA	17,618	AHFKC	18,313	XBBKA	19,002
	XBBKA	17,627	XBBKA	18,315	ADGKA	19,151
	DBBKA	17,691	AHFKB	18,354	ADHKA	19,180
	AHFKC	17,719	XAAKA	18,471	DBBKA	19,280
	AHFKB	17,755	DBBKA	18,487	XAAKA	19,333
	AHFKA	17,764	AAAKA	18,516	AAAKA	19,436
	BBBKA	17,977	BBBKA	18,785	BBBKA	19,587

7.3.7 CRITICAL UNCERTAIN FACTORS – SUMMARY AND EVALUATION

This summary table, Table 57 provides the expected value for NPVRR across the twenty-seven endpoint tree by plan and the value for NPVRR for the mid-load, mid-gas and mid-CO_2 scenario, Endpoint 14.

Table 57: Alternative Resource Plan NPVRRs

Expected Value			Endpoint 14		
PLAN	NPVRR	DELTA	PLAN	NPVRR	DELTA
ABBKA	20,074	-	ABBKA	20,070	-
ABDKA	20,092	18	ABDKA	20,087	17
ABCKA	20,111	36	ABCKA	20,109	39
ABEKA	20,128	54	ABEKA	20,126	56
ABBKW	20,131	57	ABBKW	20,138	68
ABGKA	20,239	165	AHFKA	20,179	109
AHFKC	20,244	170	AHFKC	20,214	144
AHFKA	20,245	171	ABGKA	20,237	167
AHFKB	20,268	194	AHFKB	20,258	188
CBBKA	20,274	200	CBBKA	20,276	206
ACBKA	20,276	202	ACBKA	20,293	223
ACDKA	20,294	220	ACDKA	20,311	241
ACEKA	20,313	238	ACEKA	20,331	261
ADGKA	20,474	400	ADGKA	20,505	435
ADHKA	20,493	419	XBBKA	20,514	444
XBBKA	20,543	468	ADHKA	20,523	453
DBBKA	20,549	475	DBBKA	20,555	485
AAAKA	20,739	665	AAAKA	20,781	711
BBBKA	20,824	750	BBBKA	20,833	763
XAAKA	20,833	759	XAAKA	20,852	782

Table 58 below provides the Alternative Resource Plan that had the lowest NPVRR for each endpoint scenario.

Table 58: Endpoint/Lowest NPVRR Alternative Resource Plan

EP	Plan	Value	Joint Probability
1	ABBKW	$ 22,422	1.6%
2	ABBKA	$ 19,831	3.1%
3	ABBKA	$ 17,886	1.6%
4	ABBKW	$ 22,622	3.1%
5	ABBKA	$ 20,434	6.3%
6	ABBKA	$ 18,525	3.1%
7	AHFKB	$ 22,431	1.6%
8	ABBKA	$ 20,729	3.1%
9	ABBKA	$ 19,163	1.6%
10	ABBKW	$ 21,856	3.1%
11	ABBKA	$ 19,401	6.3%
12	ABBKA	$ 17,527	3.1%
13	ABBKW	$ 22,105	6.3%
14	AHFKB	$ 22,108	12.5%
15	ABBKA	$ 18,233	6.3%
16	AHFKB	$ 21,970	3.1%
17	ABBKA	$ 20,410	6.3%
18	ABBKA	$ 18,938	3.1%
19	ABBKW	$ 21,327	1.6%
20	ABBKA	$ 19,002	3.1%
21	ABBKA	$ 17,200	1.6%
22	ABBKW	$ 21,623	3.1%
23	ABBKA	$ 19,730	6.3%
24	ABBKA	$ 17,966	3.1%
25	AHFKB	$ 21,542	1.6%
26	ABBKA	$ 20,111	3.1%
27	ABBKA	$ 18,728	1.6%

The sum of the joint probabilities and the count of the number of times an Alternative Resource Plan is the low cost scenario endpoint is shown in Table 59 below:

Table 59: Cumulative Probabilities of Lowest NPVRR Plans

Plan	Cumulative Probability	Count
ABBKA	75%	18
ABBKW	19%	6
AHFKB	6%	3

7.3.8 ADDITIONAL UNCERTAIN FACTOR

The primary other uncertain factor that could materially impact the Preferred Plan is changes to the assumptions surrounding proposed and projected environmental regulations. The Preferred Plan calls for Montrose 1 to be retired in 2016. This is primarily driven by the need to add environmental retrofits by early 2016 for MATS compliance and the projected need to add additional NO_x controls by 2020 to meet potential Ozone NAAQS requirements. Based on current assumptions regarding compliance requirements and costs, it would not be economic to invest in MATS required controls for a 2016 compliance start date to then retire the unit in 2020 due to the need to add additional NO_x controls.

While the MATS rules are final, there are several outstanding court challenges that have the potential to delay the 2016 compliance date. If the compliance date were to be delayed, the Montrose 1 retirement could be delayed as well. This could push the retirement date to 2020 when the additional NOx controls (for future Ozone NAAQS compliance) may be needed.

The Preferred Plan currently indicates that Montrose Units 2 and 3 would be retired in 2021. Like Montrose Unit 1, this retirement date could be delayed depending on future environmental regulations. KCP&L's current assumption is that proposed coal combustion residual rules will require the wet ash handling systems at Montrose to be converted to a dry handling system by 2021. Based on the current assumptions regarding compliance requirements, costs, and the assumption that a scrubber, bag house, and SCR would be needed by 2023 for Ozone NAAQS and Particulate Matter NAAQS compliance, it would not be economic to convert these systems by 2021 and the Units would be retired. Given that the rules concerning coal combustion residuals

are not final, this could change the 2021 retirement date. If the projected coal combustion residual rules compliance date was delayed, this could shift the retirement date to 2023 when additional environmental controls may be needed.

7.4 BETTER INFORMATION

The Company calculated the value of better information for each of the critical uncertain factors. For each uncertainty, the preferred plan NPVRR for the specific uncertainty scenarios (or endpoints) was compared to the better plan under each extreme uncertainty condition. The comparison was made on an expected value basis assuming that only those three particular scenarios (high value uncertainty, mid value and low value uncertainty) would occur. Baye's Theorem was applied to the endpoint probabilities to develop joint probabilities for the calculation scenarios. The difference between the expected value of the preferred plan and the expected value of the better information results is the expected value of better information.

These values represent the maximum amount the company should be willing to spend to study each of these uncertainties. It must be noted that should a Preferred Plan out-perform all alternatives across the range of a critical risk, the calculation for better information will yield a value of zero.

The results for these calculations are shown in Table 60, Table 61, and Table 62 below.

Table 60: Value of Critical Uncertain Factor: Load

Load						
Preferred Plan	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Load	5	ABBKA	20,434	6.25%	25.00%	20,076
Mid	14	ABBKA	20,070	12.50%	50.00%	
Low Load	23	ABBKA	19,730	6.25%	25.00%	
Better Information	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Load	5	ABBKA	20,434	6.25%	25.00%	20,076
Mid	14	ABBKA	20,070	12.50%	50.00%	
Low Load	23	ABBKA	19,730	6.25%	25.00%	
Expected Value of Better Information			-	Million		

Table 61: Value of Critical Uncertain Factor: Natural Gas

Natural Gas						
Preferred Plan	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Natural Gas	11	ABBKA	19,401	6.25%	25.00%	19,988
Mid	14	ABBKA	20,070	12.50%	50.00%	
Low Natural Gas	17	ABBKA	20,410	6.25%	25.00%	
Better Information	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Natural Gas	11	ABBKA	19,401	6.25%	25.00%	19,988
Mid	14	ABBKA	20,070	12.50%	50.00%	
Low Natural Gas	17	ABBKA	20,410	6.25%	25.00%	
Expected Value of Better Information			-	Million		

Table 62: Value of Critical Uncertain Factor: CO_2

CO_2						
Preferred Plan	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High CO2	13	ABBKA	22,132	6.25%	25.00%	20,126
Mid	14	ABBKA	20,070	12.50%	50.00%	
Low CO2	15	ABBKA	18,233	6.25%	25.00%	
Better Information	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High CO2	13	ABBKW	22,105	6.25%	25.00%	20,120
Mid	14	ABBKA	20,070	12.50%	50.00%	
Low CO2	15	ABBKA	18,233	6.25%	25.00%	
Expected Value of Better Information			6.79	Million		

7.5 CONTINGENCY RESOURCE PLAN

KCP&L has identified a contingency plan should the critical uncertain factors exceed the limits specified. This contingency plan is provided in Table 63 below:

Table 63: Contingency Resource Plans

Plan Name	DSM Level	Retirement Assumption	Retirement Year	Renewable Additions		Generation Addition (if needed)
ABBKW	MEEIA/RAP	Montrose-1 Montrose-2 Montrose-3	2016 2021 2021	Solar: 2018 - 11 MW 2021 - 6 MW	Wind: 2024 - 400 MW 2032- 300 MW	193 MW CT in 2031

This contingency plan was identified through an evaluation of the relative cost performance of each alternative plan under different combinations of the critical uncertain factors. The combinations of critical uncertain factors under which the contingency plan is projected to be lower cost than the Preferred Plan are as follows:

Mid or High Gas, High CO_2 Price Scenarios: ABBKW (Additional wind resources above that required for Missouri Renewable Energy Standard compliance).

While model results indicate the retirement of LaCygne 1 under a Low Gas, High CO_2 price scenarios (3 of 27 scenarios modeled), this was not selected as a contingency plan. By the time such a low gas, high CO_2 scenario developed, construction will have been completed on the currently in progress environmental retrofits and such an alternative resource plan would no longer be the low cost alternative.

The Company will update and review the critical uncertainties, Preferred Plan and contingency plans as part of the 2015 IRP to be filed in April 2015.

7.6 IMPLEMENTATION PLAN

The Implementation Plan consists of a schedule for environmental retrofits, a wind resource addition, and a Demand-Side Management schedule

7.6.1 ENVIRONMENTAL RETROFITS

Based on the 2014 Annual Update Preferred Plan, limited environmental retrofits are anticipated to be required for Montrose Units 2 & 3. These minor retrofits are projected to be needed to operate these units through year 2020. A draft schedule of the major milestones for the retrofit projects are provided in Table 64 below.

Table 64: Environmental Retrofit Schedule ** Highly Confidential **

7.6.2 GENERATION ADDITION

KCP&L issued a Request for Proposals ("RFP") on July 17, 2013 to obtain and evaluate wind project offers from wind developers. The RFP responses were such that the Company opted to pursue a wind facility in 2013 to lock-in the aggressive wind pricing offered in 2013 that may not be available in the future if the PTC is not renewed. The wind facility KCP&L obtained through a Power Purchase Agreement ("PPA") is for a 200 MW facility located in the State of Kansas. The PPA was executed on November 18, 2013 and has an expected Commercial Operating Date ("COD") of on or before December 31, 2015. A draft schedule of the major milestones for the new wind resource addition is provided in Table 65 below.

Table 65: Wind Resource Addition Schedule

Milestone Description	Milestone Dates
Issue RFP	July 17, 2013
Proposals Due	August 12, 2013
Notify Responders of Status	September 12, 2013
Recommend Short List to Senior Leadership	September 23, 2013
Begin Contract Negotiations with Short Listed Responders	October 10, 2013
Conclude Contract Negotiations	November 15, 2013
PPA Executed	November 18, 2013
Engineering and Procurement Begins	1Q, 2014
Construction Begins	1Q, 2015
Commercial Operation	October 31, 2015 - December 31, 2015

7.6.3 DEMAND-SIDE MANAGEMENT SCHEDULE

The current schedule for ongoing and planned DSM programs is shown in Table 66 below:

Table 66: DSM Program Schedule

Program Name	Program Type	New or Existing	Segment	Tariff Filing Date	Planned EM&V Plan Filing Date	MEEIA and DSM program approved	RFPs for new vendor selection issued	Vendor selected and contract awarded	Program Implemented	Annual Report	Evaluations Begun	EM&V Completed and draft report available
Income Eligible Weatherization Program	Energy Efficiency	Existing	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Air Conditioning Upgrade Rebate	Energy Efficiency	Existing	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Business Energy Efficiency Rebate-Custom	Energy Efficiency	Existing	C&I	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Demand Response Program	Demand Response	Existing	C&I	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Programmable Thermostat Program	Demand Response	Existing	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Building Operator Certification Program	Educational	Existing	C&I	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Home Energy Analyzer Program	Educational	Existing	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Business Energy Analyzer Program	Educational	Existing	C&I	Jan-14	estimated by Aug 2014	estimated by June 2014	N/A	N/A	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Home Appliance Recycling Rebate	Energy Efficiency	New	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	1 month after MEEIA approval	1 month after MEEIA approval	2 months after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Home Energy Improvements	Energy Efficiency	New	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	1 month after MEEIA approval	1 month after MEEIA approval	2 months after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Business Energy Efficiency Rebate-Standard	Energy Efficiency	New	C&I	Jan-14	estimated by Aug 2014	estimated by June 2014	1 month after MEEIA approval	1 month after MEEIA approval	2 months after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Residential Energy Reports Program	Energy Efficiency	New	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	1 month after MEEIA approval	1 month after MEEIA approval	1 month after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18
Home Lighting Rebate Program	Energy Efficiency	New	Residential	Jan-14	estimated by Aug 2014	estimated by June 2014	1 month after MEEIA approval	1 month after MEEIA approval	2 months after MEEIA approval	12 months after MEEIA implementation	Jun-15	Apr-18

SECTION 8: SPECIAL CONTEMPORARY ISSUES

From the Commission Order, EO-2014-0064, the following Special Contemporary Resource Planning Issues are addressed as follows:

8.1 PROCESS TO QUANTIFY DEMAND-SIDE SAVINGS

Describe and document the process KCP&L used to quantify all cost-effective demand-side savings in its most recent annual update filing.

Response: KCP&L engaged Navigant, Inc. to conduct a comprehensive potential study. The results of the potential study were published in August 2013. The potential study included a baseline market characterization that involved collection of extensive primary data from 208 customer sites in Kansas and Missouri. These customer data, combined with SIC code analysis of KCP&L and GMO's customer database, were used to estimate baseline measure characteristics (e.g., savings and initial market shares – see Section 2.2) and the initial breakdown of KCP&L historic load by customer segment and by end use.

8.1.1 SUMMARY OF MARKET CHARACTERIZATION STUDY

Conducted on-site surveys with samples of 69 residential, 97 commercial, and 42 industrial customers across KCP&L/GMO territories.

- All significant energy using equipment was inventoried, as well as building shell characteristics.
- Data gathered includes efficient and baseline measure "densities" and market shares for each.
- Conducted online surveys of 400 residential, 400 commercial, and 150 industrial customers across KCP&L/GMO territories.
- Data gathered was focused on customer decision-making characteristics, with a focus on developing data to generate payback acceptance curves.

- Data were used to:

- Calibrate historical end-use analysis model and to facilitate developing an end-use forecasting model;

- Develop measure savings estimates/baseline assumptions and starting market-share estimates;

- Estimate market adoption parameters (e.g., willingness to pay).

The potential study also included a measure identification and characterization analysis. Navigant developed a comprehensive measure list of conventional and emerging technologies as the first step in the measure characterization process. The initial measure list was identified through a review of a) previous DSM potential studies conducted for the state of Missouri and other Missouri utilities, b) other Navigant potential, evaluation and program design work, and c) existing KCP&L program descriptions and custom applications. Navigant then modified the measure list – both adding and deleting measures - to incorporate feedback from KCP&L and Missouri stakeholders. Overall, 500 total measures were considered across the sectors and end-uses listed below, with 300 characterized for the final model. The final list of measures, including detailed measure characterization results, can be found in Appendix A of Navigant's Potential Study, which has been submitted as a workpaper to the 2014 Annual Update filing.

8.1.2 SUMMARY OF MEASURE IDENTIFICATION AND CHARACTERIZATION ANALYSIS

- Over 500 energy efficiency, demand response and CHP measures were considered for this study and over 300 were characterized in detail. Measures not characterized were those with very low densities as found in the baseline study.

- Measure characterization includes:

    - Measure definition: retrofit, new construction, or replace on burn-out;

- EE and baseline definitions, appropriate units for normalizing;
- Energy savings for EE measure compared to code compliant and baseline measure;
- Peak demand savings for EE measure compared to code compliant and baseline;
- Natural gas savings, for benefit-cost analysis;
- Measure lifetimes;
- Incremental costs: material and labor compared to baseline/code;
- NTG estimates: mainly 1.0, except for 0.52 for recycled appliances;
- Technology densities: per home and per 1,000 square feet for non-residential space;
- Technology applicability: the percentages of base technology options that can be replaced by the EE alternative.

8.1.3 ESTIMATION OF MARKET POTENTIAL

The Potential Study also estimated the technical, economic, and market (achievable) potential for energy and demand savings. Navigant estimated the technical, economic, and market Potential for this study using its proprietary Demand Side Management Simulator (DSMSim™) model. DSMSim is a bottom-up technology diffusion and stock tracking model implemented using a System Dynamics framework.

The Potential Study included the development and estimation of payback acceptance curves which were used to estimate the long-run, or equilibrium, market share of energy efficiency measures. The objective of this analysis was to generate payback curves for each of three sectors: residential, commercial, and industrial. The approach chosen was to survey customers in the KCP&L/GMO service territory about the

payback times required for the adoption of energy efficient technologies and to use these survey data to statistically estimate payback curves.

More information about the potential study can be found in the report documents and appendices;

1. Navigants_KCPL_Demand_Side_Resource_Potential_Study_Report_FINAL_2013_August_R17 HIGHLY CONFIDENTIAL.pdf

2. Navigants_KCPL_Demand_Response_Potential_Study_Report_August_2013.pdf

3. Appendix A -- Measure Characterization Summary R2.xlsx

4. Appendix L -- Detailed Potential Output R5.xlsm

8.2 QUANTIFICATION OF DEMAND-SIDE SAVINGS

Describe and document the quantification of all cost-effective demand-side savings for KCP&L in its most recent annual update filing.

Response: KCP&L used the results of the Navigant potential study as a guideline toward the expectation that the KCP&L's demand-side programs are achieving the goal of all cost-effective demand-side savings.

8.3 PORTFOLIO OF DEMAND-SIDE RESOURCES

Describe and document how KCP&L's portfolio of demand-side resources in its adopted preferred resource plan in its most recent annual update filing is – or is not – designed to achieve a goal of all cost-effective demand-side savings during the 3-year implementation plan period and during the 20-year planning horizon, to the extent reasonable and possible.

Response: KCP&L developed a modified RAP level of DSM for 2014, and 2015, followed by the potential study RAP level starting in 2016 and beyond. The modification was based on the measure list from the Potential Study but at a level

comparable to the approved GMO MEEIA plan for years 2014 and 2015. The modified DSM plan is named MEEIA/RAP. This plan assumes DSM programs would include measures recommended in the potential study RAP level. The DSM savings levels for this scenario are based on the cost per kWh from the RAP level of DSM in the Potential Study results but the amount of capacity and energy savings would be reduced proportionately to reflect the reduced amount of savings that could be achieved with a level of spending comparable to the GMO approved MEEIA plan for years 2014 and 2015. . This plan also assumes the potential study RAP level for program years 2016 and beyond.

KCP&L used the results of the Navigant potential study as a guideline toward the expectation that the KCP&L's demand-side programs are achieving the goal of all cost-effective demand-side savings during the 20-year planning horizon.

KCP&L filed a MEEIA case in January 2014.

8.4 VENTYX MIDAS® MODEL PLANS

Describe and document generally KCP&L's plans and timing to replace the Ventyx Midas® model currently used to perform its integrated resource plan and risk analysis required in 4 CSR 240-22.060.

Response: KCP&L has no immediate plans to replace Midas®, but certainly would not rule out a change at some point in the future if another product could better serve its needs. KCP&L is not aware of another product that could effectively replace Midas®. Other models are available, but most only do part of what Midas® currently does, usually lacking the integration of financials along with the economic dispatch model, which are necessary components for revenue requirement and other performance measures used in IRP work. We will look at what possible replacements are available at this time and continue to evaluate this issue.

8.5 COMMON SOFTWARE PLATFORM TO PERFORM ANALYSIS

Describe and document generally KCP&L's plan to work collaboratively with Staff, the Office of Public Counsel, and other parties to consider the possible transition – over time – to a common software platform to perform the analysis required by 4 CSR 240-22.060.

Response: KCP&L would welcome a collaborative effort aimed at improving the entire process of performing this analysis, but views the choice of software platform(s) as merely one aspect of that. Addressing and targeting areas for improvement should be driven by rule requirements, not a selection of software.

8.6 DISTRIBUTED GENERATION, DSM, COMBINED HEAT AND POWER, & MICRO-GRID PROJECTS

Analyze and document the impacts of opportunities for KCP&L to implement distributed generation, DSM programs, combined heat and power (CHP), and micro-grid projects in collaboration with municipal, agricultural and/or industrial processes with on-site electrical and thermal load requirements, especially in targeted areas where there may be transmission or distribution line constraints.

Response: As part of the potential study, Navigant conducted an analysis of combined heat and power (CHP) systems to identify DSM opportunities from this technology. Navigant developed a stand-alone model for this analysis because the approach varied considerably from the analysis of EE measures considered in the potential study and because the results from this analysis indicate a large, but uncertain potential from CHP systems. Using this tool, Navigant evaluated the cost-effectiveness of CHP systems driven by a range of prime-movers, system configurations, and usage levels and then identified individual customers that may be well suited to the systems that were found to be cost effective.

Navigant limited this analysis to large commercial and industrial customers and assumed that CHP systems would be fueled by natural gas. Although the model is capable of analyzing both natural gas-fired and opportunity fuel-fired systems,

Navigant did not have the data available to determine the availability of opportunity fuels at or near sites. This type of analysis must be highly customized to individual sites and must include a valuation of opportunity fuel feed stocks currently used for other purposes (or disposed of). This type of analysis was beyond the scope of the potential study.

8.7 NATURAL GAS, CO_2 AND COAL PRICE PROJECTIONS

Document for use in economic modeling and resource planning low, base, and high projections for natural gas prices, CO_2 prices, and coal prices, to the extent it is not already included in the 2014 IRP filing.

Response: Low, base, and high projections for natural gas, CO_2, and coal prices have been included herein – see Table 8 and Table 14 above.

8.8 ENVIRONMENTAL CAPITAL AND OPERATING COSTS FOR COAL-FIRED GENERATING UNITS

Analyze and document the future capital and operating costs faced by each KCP&L coal-fired generating unit in order to comply with the following environmental standards:

(1) Clean Air Act New Source Review provisions: The Company reviews proposed generation projects and permits these projects, as necessary, to comply with rule.

(2) 1-hour Sulfur Dioxide National Ambient Air Quality Standard: See Table 67, Table 68, and Table 69 below.

(3) National Ambient Air Quality Standards for ozone and fine particulate matter: See Table 67, Table 68, and Table 69 below.

(4) Cross-State Air Pollution Rule, in the event that the rule is reinstated:

In the event the rule is reinstated in part or whole, the Company will comply through a combination of trading allowances within or outside its system in addition to changes in operations as necessary.

(5) Clean Air Interstate Rule: The Company complies with the rule through a combination of trading allowances within or outside its system.

(6) Mercury and Air Toxics Standards: See Table 67, Table 68, and Table 69 below.

(7) Clean Water Act Section 316(b) Cooling Water Intake Standards: See Table 67, Table 68, and Table 69 below.

(8) Clean Water Act Steam Electric Effluent Limitation Guidelines: See Table 67, Table 68, and Table 69 below.

(9) Coal Combustion Waste rules: See Table 67, Table 68, and Table 69 below.

(10) Clean Air Act Section 111(d) Greenhouse Gas standards for existing sources: The impacts of this rule will not be known until after the rule is first proposed and ultimately finalized.

(11) Clean Air Act Regional Haze Requirements. The Company is installing BART at its LaCygne Generating Station for compliance with this rule.

Table 67: Retrofit Capital Cost Estimates ** Highly Confidential **

HC

Table 68: Retrofit Fixed O&M Estimates ** Highly Confidential **

HC

Table 69: Retrofit Variable O&M Estimates ** Highly Confidential **

HC

8.9 TRANSMISSION GRID IMPACTS

Analyze and document the cost of any transmission grid upgrades or additions needed to address transmission grid reliability, stability, or voltage support impacts that could result from the retirement of any existing KCP&L coal-fired generating unit in the time period established in the IRP process, to the extent not already included in the 2014 IRP filing.

Response: The only KCP&L coal units identified for potential retirement in the IRP plan are Montrose units 1, 2, and 3. The approximate cost estimate for switching cap banks and reactors to replace the generators reactive capability would be $3-5 million. Other transmission grid impact of retirement of the Montrose units should be minimal. Retirement of any of the larger KCP&L coal fired generators would necessitate the replacement of that supply with some other resource. It is not possible to identify the necessary transmission upgrades that might be associated with retirement of a specific generating unit without knowing the specific location of the replacement generation. From the transmission perspective, the most advantageous location for replacement generation is the site of the retired generation where the transmission capacity utilized by the retired generation would be available for new resources.

8.10 EMERGING ENERGY EFFICIENCY TECHNOLOGIES

Analyze the impact of foreseeable emerging energy efficiency technologies throughout the planning period.

Response: As part of the potential study analysis, Navigant developed a comprehensive measure list of conventional and emerging technologies as the first step in the measure characterization process described in Section 8.1 above.

The initial measure list was identified through a review of a) previous DSM potential studies conducted for the state of Missouri and other Missouri utilities, b) other Navigant potential, evaluation and program design work, and c) existing KCP&L program descriptions and custom applications. Navigant then modified the measure

list – both adding and deleting measures - to incorporate feedback from KCP&L and Missouri stakeholders. Overall, 500 total measures were considered across the sectors and end-uses listed below, with 300 characterized for the final model. The final list of measures, including detailed measure characterization results, can be found in Appendix A.

For example, emerging technologies such as LEDs show market penetration later in the forecast horizon as their costs and performance come down an estimated learning curve, thereby improving their competitiveness with other measures such as CFLs.