VOLUME 7

RESOURCE ACQUISITION STRATEGY SELECTION

KANSAS CITY POWER & LIGHT COMPANY (KCP&L)

INTEGRATED RESOURCE PLAN

4 CSR 240-22.070

APRIL, 2015

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PURPOSE: This rule requires the utility to select a preferred resource plan, develop an implementation plan, and officially adopt a resource acquisition strategy. The rule also requires the utility to prepare contingency plans and evaluate the demand-side resources that are included in the resource acquisition strategy.

SECTION 1: PREFERRED RESOURCE PLAN

The utility shall select a preferred resource plan from among the alternative resource plans that have been analyzed pursuant to the requirements of 4 CSR 240-22.060. The utility shall 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 utility shall provide the names, titles, and roles of the utility decision–makers in the preferred resource plan selection process. The preferred resource plan shall satisfy at least the following conditions:

(A) In the judgment of utility decision makers, strike an appropriate balance between the various planning objectives specified in 4 CSR 240-22.010(2);

See response in Rule 070(1)(D)

(B) Invest in advanced transmission and distribution technologies unless, in the judgment of the utility decision-makers, investing in those technologies to upgrade transmission and/or distribution networks is not in the public interest;

See response in Rule 070(1)(D)

(C) Utilize demand-side resources to the maximum amount that comply with legal mandates and, in the judgment of the utility decision-makers, are consistent with the public interest and achieve state energy policies; and

See response in Rule 070(1)(D)

(D) In the judgment of the utility decision makers, the preferred plan, in conjunction with the deployment of emergency demand response measures and access to short-term and emergency power supplies, has sufficient resources to serve load forecasted under extreme weather conditions pursuant to 4CSR 240-22.030(8)(B) for the implementation period. If the utility cannot affirm the sufficiency of resources, it shall consider an alternative resource plan or modifications to its preferred resource plan that can meet extreme weather conditions.

The Preferred Plan that has been selected for KCP&L is shown in Table 1 below:

Table 1: KCP&L Preferred Plan

Year	CT's (MW)	Wind (MW)	Solar (MW)	DSM (MW)	Retire (MW)	Existing Capacity (MW)
2015	0			29		4572
2016	0	350	3	71		4387
2017	0	300		103		4432
2018	0			124		4432
2019	0			139		4442
2020	0			176		4442
2021	0			206		4102
2022	0			228		4102
2023	0			248		4117
2024	0			266		4056
2025	0			284		4056
2026	0		7	299		4056
2027	0			308		4056
2028	0			316		4056
2029	207			325		4056
2030	0			333		4056
2031	0			337		4056
2032	0			341		4056
2033	0			345		4056
2034	0			349		4056

Based in part upon current Missouri RPS rule requirements, the Preferred Plan includes 10 MW of solar additions and 650 MW of wind additions over the twenty-year planning period. It should be noted that the solar resource addition in 2016 is expected to consist of ownership of 3 MW of Commercial and Industrial rooftop installations. A 350 MW wind addition is expected to be in service in 2016. An additional 300 MW of wind is expected to be in service in 2017. DSM resources consist of a suite of thirteen Energy Efficiency and three Demand Response programs that KCP&L considers the capacity and energy estimated from these programs comprise realistically achievable levels. The Preferred Plan reflects Montrose Unit 1 ceasing to burn coal by 2017 and Montrose Units 2 and 3 ceasing to burn coal by 2022. The environmental drivers that contributed to the discontinuing of burning of coal includes Mercury and Air Toxics Standards Rule, Ozone National Ambient Air Quality Standards (NAAQS), PM NAAQS, Clean Water Act Section 316(a) and (b), Effluent Guidelines, Coal Combustion Residuals Rule, and Clean Power Plan.

The Preferred Plan was not the lowest cost plan from a Net Present Value of Revenue Requirement (NPVRR) perspective. One Alternative Resource Plan, KCCCA, had the lowest expected NPVRR of all modeled plans. This plan included the same DSM level as the Preferred Plan, Option C, but Montrose Units 2 and 3 ceased burning coal by the year 2020. The plan producing the next lowest expected value of NPVRR, Alternative Resource Plan KAACA, was chosen as the Preferred Plan.

It should be noted that the selection of the KCP&L Preferred Plan is based upon resource planning in tandem with KCP&L-Greater Missouri Operations Company (GMO) and provides benefit to Missouri retail customers by planning on a joint basis. The lowest cost joint Alternative Resource Plan CBBFA includes Alternative Resource Plan KAACA.

The Preferred Plan also meets the fundamental planning objectives as required by Rule 22.010(2) to provide the public with energy services that are safe,

reliable, and efficient, at just and reasonable rates, in compliance with all legal mandates, and in a manner that serves the public interest and is consistent with state energy and environmental policies. The Preferred Plan was reviewed and approved by Terry D. Bassham, President and Chief Executive Officer and Kevin Noblet, Vice President – Generation.

The Forecast of Capacity Balance worksheet associated with the KCP&L Preferred Plan is shown in Table 2 below. It should be noted that the "Peak Forecast" data is based upon an extreme weather forecast. The Capacity Balance shows that reserve obligations are met each year.

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Table 2: KCP&L Forecast of Capacity Balance - Preferred Plan **Highly Confidential**

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The Preferred Plan was tested under extreme weather conditions as defined by Rule 240-22.030(8)(B). There was no unserved energy under this extreme condition. The performance measure effects and annual amount of unserved energy given extreme weather conditions are provided below.

Table 3: Performance Measure Impact - Extreme Weather ** Highly Confidential **

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Table 4: Extreme Weather Unserved Energy

Year	Unserved Energy (MWh) Extreme Weather
2015	0
2016	0
2017	0
2018	0
2019	0
2020	0
2021	0
2022	0
2023	0
2024	0
2025	0
2026	0
2027	0
2028	0
2029	0
2030	0
2031	0
2032	0
2033	0
2034	0

SECTION 2: RANGES OF CRITICAL UNCERTAIN FACTORS

The utility shall specify the ranges or combinations of outcomes for the critical uncertain factors that define the limits within which the preferred resource plan is judged to be appropriate and explain how these limits were determined. The utility shall also describe and document its assessment of whether, and under what circumstances, other uncertain factors associated with the preferred resource plan could materially affect the performance of the preferred resource plan relative to alternative resource plans.

The ranges of critical uncertain factors are calculated by finding the value at which the critical uncertain factor needs to change in order for the Preferred Plan to no longer be preferred. The values of the NPVRR for the Preferred Resource Plan and the lowest cost plan under extreme conditions are compared and by using linear interpolation a crossover point value is found and expressed as a percent of the range of the critical uncertain factor. These percentages are superimposed on the high, mid and low forecasts for each critical uncertain factor to develop the resulting ranges.

The Company has selected its Preferred Plan based in part on the results of the joint planning for KCP&L and GMO. Details on the joint plans can be found in Volume 6, Section 3.1. In the joint planning analysis, the overall lowest cost plan on an expected value NPVRR basis, CBBFA and two other plans, CCDCC and CCDFC proved to be the lowest cost plans under different risk scenarios. The values of these plans' NPVRR under each of the risks are detailed in the following table.

Table 5: Risk Scenario NPVRR

Assuming Low CO2						
NPVRR ($MM)	High Load	High NG	Low CO2	EV	Low NG	Low Load
CCDCC	28,446	27,661	28,028	29,230	28,332	27,674
CBBFA	28,236	27,258	27,831	29,106	28,367	27,490
Assuming High CO2						
NPVRR ($MM)	High Load	High NG	High CO2	EV	Low NG	Low Load
CCDFC	31,520	30,748	31,026	29,181	30,972	30,603
CBBFA	31,577	30,676	31,085	29,106	31,120	30,663

Based on joint planning, the uncertain factors which may cause the Company to modify the KCP&L Preferred Plan are limited to high CO_2 and low natural gas prices.

2.1 CRITICAL UNCERTAIN FACTOR: CO_2

The uncertain factor range calculation is detailed in Table 6 below. As assumptions on the cost of future CO_2 increase toward the high scenario, Alternative Resource Plan CCDFC becomes the lower cost plan.

Table 6: CO_2 Uncertain Factor Range

CO2		
Plan	Low	High
CCDFC	27,994	31,026
CBBFA	27,831	31,085
Percent	from Low	
Upper %	73.4%	

The resulting limits of the range of this critical uncertain factor are detailed in Figure 1 below:

Figure 1: CO_2 Uncertain Factor Range Limits ** Highly Confidential **

2.2 CRITICAL UNCERTAIN FACTOR: LOAD

The uncertain factor range calculation is detailed in Table 7 below. Note the load growth forecast does not cause any other plan to out-perform the lowest-cost joint plan.

Table 7: Load Uncertain Factor Range

Load		
Plan	Mid	High
CBBFA	27,831	28,236
CBBFA	27,831	28,236
Percent	from Mid	from Low
Upper %	N/A	N/A

Plan	Mid	Low
CBBFA	27,831	27,490
CBBFA	27,831	27,490
Percent	from Mid	from Low
Lower %	N/A	N/A

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2.3 CRITICAL UNCERTAIN FACTOR: NATURAL GAS

The uncertain factor range calculation is detailed in Table 8 below. As assumptions on the cost of future natural gas decrease towards the low scenario, Alternative Resource Plan CCDCC becomes a lower cost plan. .

Table 8: Natural Gas Uncertain Factor Range

Natural Gas		
Plan	**Mid**	**High**
CBBFA	27,831	27,258
CBBFA	27,831	27,258
Percent	**from Mid**	**from Low**
Upper %	N/A	N/A

Plan	**Mid**	**Low**
CCDCC	28,028	28,332
CBBFA	27,831	28,367
Percent	**from Mid**	**from Low**
Lower %	-84.7%	7.7%

The resulting limits of the range of this critical uncertain factor are detailed in Figure 2 below:

Figure 2: Natural Gas Uncertain Factor Range Limit **Highly Confidential**

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SECTION 3: BETTER INFORMATION

The utility shall describe and document its quantification of the expected value of better information concerning at least the critical uncertain factors that affect the performance of the preferred resource plan, as measured by the present value of utility revenue requirements. The utility shall provide a tabulation of the key quantitative results of that analysis and a discussion of how those findings will be incorporated in ongoing research activities.

The Company calculated the value of better information for each of the critical uncertain factors identified in the preliminary sensitivity test. 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 conditional 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 below.

Table 9: Better Information - CO_2

CO2						
Preferred Plan	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High CO2	9	CBBFA	31,085	10.00%	40.0%	29,133
Low CO2	10	CBBFA	27,831	15.00%	60.0%	
						-
Better Information	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High CO2	9	CCDFC	31,026	10.00%	40.0%	29,109
Low CO2	10	CBBFA	27,831	15.00%	60.0%	
Expected Value of Better Information			24	Million		

Table 10: Better Information - Load

Load						
Preferred Plan	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Load	4	CBBFA	28,236	7.50%	25.00%	27,847
Mid	10	CBBFA	27,831	15.00%	50.00%	
Low Load	16	CBBFA	27,490	7.50%	25.00%	
Better Information	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Load	4	CBBFA	28,236	7.50%	25.00%	27,847
Mid	10	CBBFA	27,831	15.00%	50.00%	
Low Load	16	CBBFA	27,490	7.50%	25.00%	
Expected Value of Better Information			-	Million		

Table 11: Better Information - Natural Gas

Natural Gas						
Preferred Plan	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Natural Gas	8	CBBFA	27,258	7.50%	25.00%	27,822
Mid	10	CBBFA	27,831	15.00%	50.00%	
Low Natural Gas	12	CBBFA	28,367	7.50%	25.00%	
Better Information	**Endpoint**	**Plan**	**NPVRR**	**EP Prob**	**Cond. Prob**	**Expected Value**
High Natural Gas	8	CBBFA	27,258	7.50%	25.00%	27,813
Mid	10	CBBFA	27,831	15.00%	50.00%	
Low Natural Gas	12	CCDCC	28,332	7.50%	25.00%	
Expected Value of Better Information			9	Million		

SECTION 4: CONTINGENCY RESOURCE PLANS

The utility shall describe and document its contingency resource plans in preparation for the possibility that the preferred resource plan should cease to be appropriate, whether due to the limits identified pursuant to 4 CSR240-22.070(2) being exceeded or for any other reason.

(A) The utility shall identify as contingency resource plans those alternative resource plans that become preferred if the critical uncertain factors exceed the limits developed pursuant to section (2).

KCP&L has identified a contingency plan should the critical uncertain factors exceed the limits specified. The Contingency Resource Plan is shown in the table below:

Table 12: Contingency Resource Plan

Plan Name	DSM Level	Facility	Year to Cease Burning Coal	Renewable Additions		Generation Addition (if needed)
KCCCA	Option C	Montrose-1 Montrose-2 Montrose-3	2016 2019 2019	Solar: 2016 - 3 MW 2026 - 7 MW	Wind: 2016 - 350 MW 2017 - 300 MW	207 MW CT in 2029

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

Low Gas, Low CO_2 Price Scenario: Under this scenario, the Alternative Resource Plan shown in Table 12 above is the Contingency Plan.

Low or Mid Gas, High CO_2 Price Scenario: Under this scenario, the Alternative Resource Plan shown in Table 12 above is the Contingency Plan.

(B) The utility shall develop a process to pick among alternative resource plans, or to revise the alternative resource plans as necessary, to help ensure reliable and low cost service should the preferred resource plan no longer be appropriate for any reason. The utility may also use this process to confirm the viability of contingency resource plans identified pursuant to subsection (4)(A).

The process used to select alternative resource plans was derived from the analysis of the joint KCP&L/GMO planning results under identical risks imposed on the KCP&L stand-alone system. The KCP&L Preferred Plan was chosen as the resource plan that exhibited the lowest expected value of NPVRR found in the joint plans. The Contingency Plan was chosen as the plan that could perform better than the Preferred Plan, should certain extreme conditions of risk factors arise. These factors are described in the response to Rule 240-22.070(2) in this Volume.

(C) Each contingency resource plan shall satisfy the fundamental objective in 4 CSR240-22.010(2) and the specific requirements pursuant to 4 CSR 240-22.070(1).

The Contingency Plan KCCCA meets the considerations of Rule 240.22.010(2) as one of the alternative resource plans developed and conformed in the response to Rule 240-22.060(3) in Volume 6 of this filing.

As for concurrence with Rule 240.070(1), Plan KCCCA conforms by meeting Rule 240.010(2), considers investments in advanced transmission and distribution technologies, utilizes the amount of DSM that conforms to legal mandates and demonstrates adequate access to emergency short-term power supply.

SECTION 5: LOAD –BUILDING PROGRAMS

Analysis of Load-Building Programs. If the utility intends to continue existing load building programs or implement new ones, it shall analyze these programs in the context of one (1) or more of the alternative resource plans developed pursuant to 4 CSR 240- 22.060(3) of this rule, including the preferred resource plan selected pursuant to 4 CSR240-22.070(1). This analysis shall use the same modeling procedure and assumptions described in 4 CSR 240-22.060(4). The utility shall describe and document—

(A) Its analysis of load building programs, including the following elements:

1. Estimation of the impact of load building programs on the electric utility's summer and winter peak demands and energy usage;

2. A comparison of annual average rates in each year of the planning horizon for the resource plan(s) with and without the load building program;

3. A comparison of the probable environmental costs of the resource plan(s) in each year of the planning horizon with and without the proposed load-building program;

4. A calculation of the performance measures and risk by year; and

5. An assessment of any other aspects of the proposed load-building programs that affect the public interest; and

(B) All current and proposed load-building programs, a discussion of why these programs are judged to be in the public interest, and, for all resource plans that include these programs, plots of the following over the planning horizon:

1. Annual average rates with and without the load-building programs; and

2. Annual utility costs and probable environmental costs with and without the load-building programs.

At this time, KCP&L does not have any load-building programs.

SECTION 6: IMPLEMENTATION PLAN

(6) The utility shall develop an implementation plan that specifies the major tasks, schedules, and milestones necessary to implement the preferred resource plan over the implementation period. The utility shall describe and document its implementation plan, which shall contain—

6.1 LOAD ANALYSIS - SCHEDULE AND DESCRIPTION

(A) A schedule and description of ongoing and planned research activities to update and improve the quality of data used in load analysis and forecasting;

KCP&L plans to conduct its next Residential Appliance Saturation Survey in 2016-2017. KCP&L is also looking at the option of expanding the survey to the commercial sector in 2016-2017. The last residential survey was completed in 2013. The results were used to calculate appliance saturations and these saturations were used to calibrate DOE forecasts of appliance saturations for use in KCP&L's load forecasting models. KCP&L also plans to match the responses with the customers' billing records and to conduct a conditional demand study to measure the unit energy consumption (UEC) for each major appliance.

KCP&L is in the process of developing a framework for incorporating photovoltaic (PV) impacts into the energy forecast in order to capture PV energy impacts. The goal would be for inclusion in the next IRP update.

KCP&L is developing a new industrial model that will accommodate the creation of an industrial intensity index which would be calibrated to our service area based on employment. It will be implemented in the 2016 update.

The timeline currently expected for the Residential Appliance Saturation Survey is shown in the following table:

Table 13: Appliance Saturation Survey Initiative

Appliance Saturation Survey Initiative	Date Range
Issue Appliance Saturation Survey Request for Proposal (RFP)	06/2015 - 12/2015
Evaluate Conducting a C&I Survey	1/2015 - 12/2015
Conduct Residential Appliance Saturation Survey	01/2016-06/2016
Tabulation Appliance Saturation Survey Results	06/2016-12/2016
Conduct Conditional Demand Study	01/2017-5/2017
Implement Survey Result in Load Forecast	05/2017-7/2017

6.2 DEMAND-SIDE PROGRAMS – SCHEDULE AND DESCRIPTION

(B) A schedule and description of ongoing and planned demand-side programs and demand-side rates, evaluations, and research activities to improve the quality of demand-side resources;

The current schedule for ongoing and planned DSM programs is shown in the two tables below:

Table 14: DSM Program Schedule – Existing Programs

Program Name	Program Type	Status	Segment	Program Implemented	Annual Report	EM&V Completed and draft report available
Income Eligible Weatherization	Energy Efficiency	Existing	Residential	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Air Conditioning Upgrade Rebate	Energy Efficiency	Existing	Residential	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Business Energy Efficiency Rebate-Custom	Energy Efficiency	Existing	C&I	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Mpower	Demand Response	Existing	C&I	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Residential Programmable Thermostat	Demand Response	Existing	Residential	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Building Operator Certification	Educational	Existing	C&I	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Home Energy Analyzer	Educational	Existing	Residential	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Business Energy Analyzer	Educational	Existing	C&I	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Home Appliance Recycling Rebate	Energy Efficiency	Existing	Residential	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Business Energy Efficiency Rebate - Prescriptive	Energy Efficiency	Existing	C&I	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Home Energy Reports	Energy Efficiency	Existing	Residential	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year
Home Lighting Rebate	Energy Efficiency	Existing	Residential	Jul. 6, 2014	90-days following Plan Year	1-Yr following Plan Year

Table 15: DSM Program Schedule – Existing Programs

Program Name		New or Existing	Segment	Tariff Filing Date	MEEIA and DSM program approved	Program Implemented	Annual Report	EM&V Completed and draft report available
Home Lighting Rebate	Energy Efficiency	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Home Appliance Recycling Rebate	Energy Efficiency	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Home Energy Report	Energy Efficiency	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Online Home Energy Audit	Educational	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Whole House Efficiency	Energy Efficiency	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Income-Eligible Multi-Family	Energy Efficiency	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Income-Eligible Weatherization	Energy Efficiency	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Residential Programmable Thermostat	Demand Response	New	Residential	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Business Energy Efficiency Rebate - Prescriptive	Energy Efficiency	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Business Energy Efficiency Rebate - Custom	Energy Efficiency	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Strategic Energy Management	Energy Efficiency	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Block Bidding	Energy Efficiency	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Online Building Energy Audit	Educational	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Small Business Direct Install	Energy Efficiency	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Commercial Programmable Thermostat	Demand Response	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year
Demand Response Incentive	Demand Response	New	C&I	Jun., 2015	Oct., 2015	Jan., 2016	90-days following Plan Year	1-Yr following Plan Year

Additional detail regarding the implementation plan for the DSM Preferred Plan can be found in Volume 5. It includes the descriptions of the programs, the implementation strategy, a discussion of risk management, the incentive levels used for planning purposes, energy and peak demand savings goals, and budget estimates. KCP&L will file an application under the Missouri Energy Efficiency Investment Act (MEEIA) requesting Commission approval of demand-side programs for a program implementation period of 2016 to 2018 in mid-2015.

6.3 SUPPLY-SIDE – SCHEDULES AND DESCRIPTIONS

(C) A schedule and description of all supply-side resource research, engineering, retirement, acquisition, and construction activities, including research to meet expected environmental regulations;

Based on the 2015 Preferred Plan, limited environmental retrofits are anticipated to be required for Montrose Units 2 & 3 prior to cease burning coal in 2021. These retrofits are required to operate the units through year 2020. Other projects anticipated to begin within the three year implementation period are Hawthorn 5 Cooling Tower and Spray Dry Absorber water reduction, Iatan 1 Cooling Tower, and LaCygne 2 Submerged Flight Conveyer. A draft schedule of major milestones for expected retrofit projects are provided in Table 16 below:

Table 16: Retrofit Milestone Schedule

Retrofit Project	Milestone Description	Date Range
Hawthorn 5 Cooling Tower	Studies/Specification/Bid/Award	01/2016 - 4/2018
Hawthorn 5 SDA water reduction	Study/Design/Construction	01/2015 - 07/2015
Iatan 1 Cooling Tower	Studies/Specification/Bid/Award	01/2016 - 4/2018
La Cygne 2 SFC	Design/Procurement/Construction	04/2015 - 09/2018
Montrose 2 & 3 ACI	Engineering/Procurement/Construction	01/2015 - 4/2015
Montrose 2 & 3 ACI	Checkout/Startup/Tuning/Testing	04/2015 - 02/2016
Montrose 2 & 3 ESP Improvements	Engineering/Procurement/Construction	01/2015 - 4/2015
Montrose 2 & 3 ESP Improvements	Checkout/Startup/Tuning/Testing	04/2015 - 02/2016
Montrose 2 & 3 sluiced ash modifications	Study/Design/Procurement/Construction	01/2015 - 12/2018
Montrose 2 & 3 new fly ash pug mill	Study/Design/Procurement/Construction	04/2015 - 04/2016

ACI : Activated Carbon Injection ESP: Electrostatic Precipitator
SDA: Spray Dry Absorber SFC: Submerged Flight Conveyor

Also, the Preferred Plan includes solar resource additions in 2016 consisting of ownership in 3 MW of Commercial and Industrial solar rooftop installations. A draft schedule of the major milestones for this solar initiative is provided in the following table:

Table 17: Solar Initiative

Solar Initiative	Date Range
Evaluate/Select Developer(s)	**04/2015 - 07/2015**
Site Designs/Obtain Permits	**8/2015 - 12/2015**
Rooftop Installations Mobilization/Construction	**01/2016 - 5/2016**
Commercial Operation for Rooftop Installations	**05/2016 - 06/2016**

In addition, KCP&L is working towards procuring additional wind resources.

6.4 MILESTONES AND CRITICAL PATHS

(D) Identification of critical paths and major milestones for implementation of each demand-side resource and each supply-side resource, including decision points for committing to major expenditures;

Critical paths and major milestones for implementation of each demand-side resource are shown above, in Section 6.2.

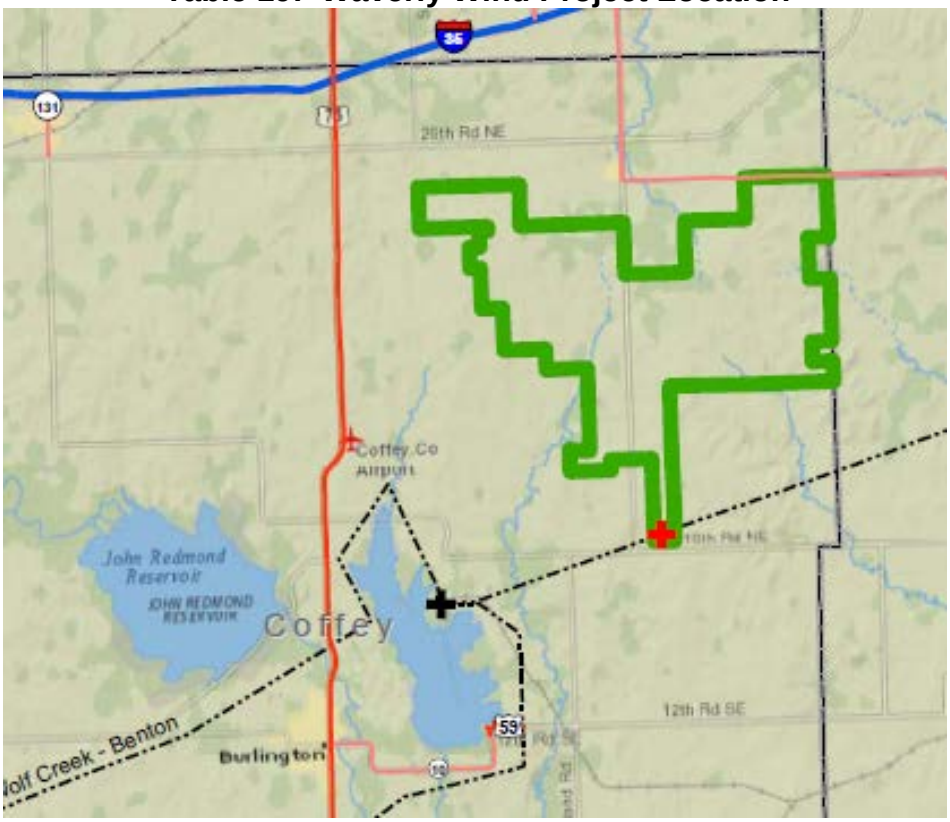
On November 18, 2013, KCP&L entered into a PPA agreement with EDP Renewables, to purchase energy from Waverly, a 200 MW wind project located near Waverly, in Coffey County, Kansas. The facility is expected to be in-service by December 31, 2015. Table 18 provides a milestone schedule of activities.

Table 18: Waverly Wind Schedule

Milestone Description	Milestone Dates
Site Mobilization for O&M Building, and Substation and Transmission Line	March. 2015
Site Mobilization for Balance of Plant	March, 2015
Main Power Transfomer Delivered	June, 2015
Turbine Deliveries and Erection Begin and Main Power Transformer Energized	September, 2015
Mechanical Completion of Turbines Begins and Commencement of Turbine Commissioning	October, 2015
Mechanical Completion of Turbines Complete	November, 2015
Commercial Operation Date[1]	December, 2015
[1] Delays may be possible due to adverse weather	

Table 19 shows the location of the Waverly wind project:

Table 19: Waverly Wind Project Location



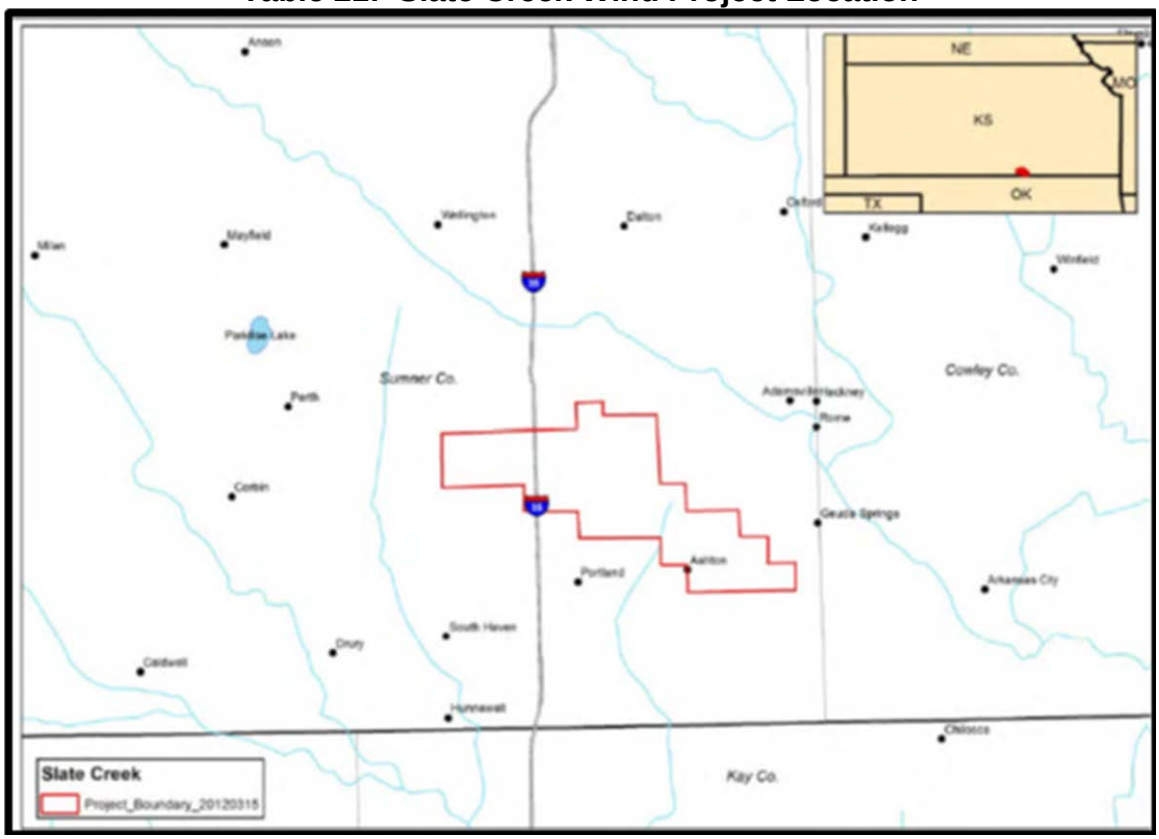
On June 11, 2014, Great Plains Energy Inc., the parent company of KCP&L, entered into a PPA agreement with EDF to purchase energy from Slate Creek, a 150 MW wind project located in south central Kansas. The facility is expected to be in-service by December 31, 2015. Table 20 provides a milestone schedule of activities.

Table 20: Slate Creek Wind Schedule

2015 WIND ACQUISITION MAJOR MILESTONE SCHEDULE	
Milestone Description	**Milestone Dates**
Site Mobilization for O&M Building, and Substation and Transmission Line	March. 2015
Site Mobilization for Balance of Plant	May, 2015
Main Power Transfomer Delivered	July, 2015
Turbine Deliveries and Erection Begin and Main Power Transformer Energized	August, 2015
Mechanical Completion of Turbines Begins and Commencement of Turbine Commissioning	September, 2015
Mechanical Completion of Turbines Complete and Turbine Commissioning Complete	November, 2015
Commercial Operation Date[1]	December, 2015
[1] Delays may be possible due to adverse weather	

Table 21 shows the location of this wind project:

Table 21: Slate Creek Wind Project Location



6.5 COMPETITIVE PROCUREMENT POLICIES

(E) A description of adequate competitive procurement policies to be used in the acquisition and development of supply-side resources;

KCP&L has an extensive review and analysis process for the acquisition of supply-side resources. In the 2015-2018 Implementation Period it is anticipated that KCP&L will evaluate and select one or more contractors for development of up to 3 MW of Commercial and Industrial solar rooftop installations. A team from several departments in the company will evaluate and select contractors that will provide the most beneficial services to KCP&L. Additionally, KCP&L plans to obtain 300 MW's of wind resources with commercial operation occurring in 2017.

6.6 MONITORING CRITICAL UNCERTAIN FACTORS

(F) A process for monitoring the critical uncertain factors on a continuous basis and reporting significant changes in a timely fashion to those managers or officers who have the authority to direct the implementation of contingency resource plans when the specified limits for uncertain factors are exceeded; and

Each critical uncertain factor is reviewed on an individual basis due to the varied nature of the information sources used in its review. This IRP analysis will be updated on an annual basis reflecting any changes to these critical uncertain factors. Results will be distributed to the Vice President, Generation.

Critical Uncertain Factor: CO_2

CO_2 credit prices are reviewed on a continual basis. The data sources used are third party views predicting the price of the credits. Most of these third party studies are sparked by proposed legislation or are updated up to a quarterly basis. This review and update is conducted by the Fuels department with a full review conducted on an annual basis.

Critical Uncertain Factor: Load

Load forecasts are updated on an annual basis as part of the company's annual budgeting process.

Critical Uncertain Factor: Natural Gas

Natural Gas forecasts are updated weekly with executive updates provided on a monthly basis.

6.7 MONITORING PREFERRED RESOURCE PLAN

(G) A process for monitoring the progress made implementing the preferred resource plan in accordance with the schedules and milestones set out in the implementation plan and for reporting significant deviations in a timely fashion to those managers or officers who have the authority to initiate corrective actions to ensure the resources are implemented as scheduled.

KCP&L has processes in place to monitor its Demand-Side Management programs and track and report their performance compared to the planned implementation schedule.

Wind development activities are reported to the Vice President, Generation on an ongoing basis and weekly meetings have been established for the solar initiatives.

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SECTION 7: RESOURCE ACQUISITION STRATEGY

The utility shall develop, describe and document, officially adopt, and implement a resource acquisition strategy. This means that the utility's resource acquisition strategy shall be formally approved by an officer of the utility who has been duly delegated the authority to commit the utility to the course of action described in the resource acquisition strategy. The officially adopted resource acquisition strategy shall consist of the following components:

7.1 PREFERRED RESOURCE PLAN

(A) A preferred resource plan selected pursuant to the requirements of section (1) of this rule;

The Preferred Resource Plan is outlined in Section 1 above per Rule 240-22.070(1).

7.2 IMPLEMENTATION PLAN

(B) An implementation plan developed pursuant to the requirements of section (6) of this rule; and

The Implementation Plan is outlined in Section 6 above per Rule 240-22.070(6).

7.3 CONTINGENCY RESOURCE PLANS

(C) A set of contingency resource plans developed pursuant to the requirements of section (4) of this rule and identification of the point at which the critical uncertain factors would trigger the utility to move to each contingency resource plan as the preferred resource plan.

The Contingency Resource Plan is outlined in Section 4 above per Rule 240-22.070(4).

KANSAS CITY POWER & LIGHT COMPANY

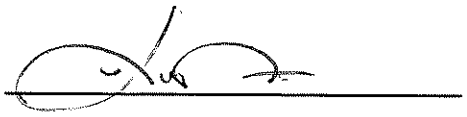
INTEGRATED RESOURCE PLAN – 2015 TRIENNIAL FILING

CORPORATE APPROVAL AND STATEMENT OF COMMITMENT FOR

RESOURCE ACQUISITION STRATEGY

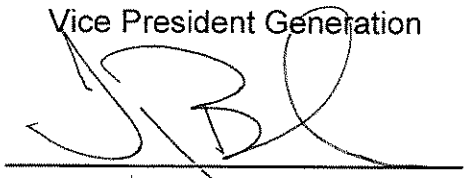
In accordance with Missouri Public Service Commission rules found in 4 CSR 240-22 and 4 CSR 240-22.080(3), Kansas City Power & Light Company ("KCP&L") now officially adopts for implementation the resource acquisition strategy contained in this Triennial filing.

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

SECTION 8: EVALUATION OF DEMAND-SIDE PROGRAMS AND DEMAND-SIDE RATES

The utility shall describe and document its evaluation plans for all demand-side programs and demand-side rates that are included in the preferred resource plan selected pursuant to 4 CSR 240-22.070(1). Evaluation plans required by this section are for planning purposes and are separate and distinct from the evaluation, measurement, and verification reports required by 4 CSR 240-3.163(7) and 4 CSR 240-20.093(7); nonetheless, the evaluation plan should, in addition to the requirements of this section, include the proposed evaluation schedule and the proposed approach to achieving the evaluation goals pursuant to 4 CSR 240-3.163(7) and 4 CSR 240-20.093(7). The evaluation plans for each program and rate shall be developed before the program or rate is implemented and shall be filed when the utility files for approval of demand-side programs or demand-side program plans with the tariff application for the program or rate as described in 4 CSR 240-20.094(3). The purpose of these evaluations shall be to develop the information necessary to evaluate the cost-effectiveness and improve the design of existing and future demand-side programs and demand-side rates, to improve the forecasts of customer energy consumption and responsiveness to demand-side programs and demand-side rates, and to gather data on the implementation costs and load impacts of demand-side programs and demand-side rates for use in future cost-effectiveness screening and integrated resource analysis.

KCP&L will prepare a request for proposal ("RFP") to conduct an evaluation, measurement and verification ("EM&V") of all demand-side programs and demand-side rates that are approved by the Commission.

EM&V Process Evaluation

The scope of work for the RFP will require that the Vendor conduct a process evaluation pursuant to requirements of 4 CSR 240-22.070 (8) (A) and require the

Vendor to provide answers to questions 1 through 5 of this rule section in the EM&V final report ("Report").

EM&V Impact Evaluation

The scope of work for the EM&V RFP will require that the Vendor conduct the impact evaluation pursuant to requirements of 4 CSR 240-22.070 (8) (B) and require the Vendor to provide answers to questions 1 and 2 of this rule section in the Report.

EM&V Data Collection

The scope of work for the EM&V RFP will require that the Vendor collect EM&V participation rate data, utility cost data, participant cost data and total cost data pursuant to requirements of 4 CSR 240-22.070 (8) (C).

EM&V Reporting Requirements

The scope of work for the EM&V RFP will also require that the Vendor perform, and report EM&V of each commission-approved demand-side program in accordance with 4 CSR 240-3.163 (7).

KCP&L will provide the Missouri Public Service Commission ("Commission") Staff and other stakeholders with an opportunity to review and comment on the RFP prior to issuance of the EM&V RFP.

The proposed EM&V RFP will be available for Commission staff and stakeholder review three months after Commission approval of these demand-side resources pursuant to 4 CSR 240-20.094 and the approval KCP&L's demand-side program investment mechanism ("DSIM") pursuant to 4 CSR 240-20.093 ("Approval Date"). The proposed RFP may be modified to incorporate any important issues or concerns raised by the Commission staff or stakeholders. The EM&V RFP will be issued five months after the Commission Approval Date. Vendor selection will be seven months after the Commission Approval Date.

An EM&V for all demand-side programs and demand-side rates that are included in KCP&L's Preferred Plan will begin after the completion of each program year.

The EM&V RFP will require the selected vendor to evaluate and prepare an annual program performance report. Preliminary EM&V reports will be available by August 1 following the program year. Commission Staff and stakeholders will be provided with an opportunity to review, and comment on the preliminary report. The final EM&V report will be available by October 1 following the completion of each program year.

EM&V Schedule and Budget

The EM&V budget shall not exceed five percent (5%) of the total budget for all approved demand-side program costs. A tentative EM&V schedule is shown in Table 22 below. This schedule will be updated when KCP&L files for new programs under MEEIA.

Table 22: Evaluation Schedule[i]

Estimated EM&V Schedule	
Commission Approval of Programs	Estimated Dec, 2015
EM&V RFP ready for review	4/1/2016
Issue EM&V RFP	6/1/2016
EM&V Vendor Selected	8/1/2016
1st Annual EM&V Begins	1/1/2017
1st Annual Draft Report	8/1/2017
1st Annual Program Report	10/1/2017
2nd Annual EM&V Begins	1/1/2018
2nd Annual Draft Report	8/1/2018
2nd Annual Program Report	10/1/2018
3rd Annual EM&V Begins	1/1/2019
3rd Annual Draft Report	8/1/2019
3rd Annual Program Report	10/1/2019

8.1 PROCESS EVALUATION

(A) Each demand-side program and demand-side rate that is part of the utility's preferred resource plan shall be subjected to an ongoing evaluation process which addresses at least the following questions about program design.

1. What are the primary market imperfections that are common to the target market segment?

See the response to Section 8, above.

2. Is the target market segment appropriately defined, or should it be further subdivided or merged with other market segments?

See the response to Section 8, above.

3. Does the mix of end-use measures included in the program appropriately reflect the diversity of end-use energy service needs and existing end-use technologies within the target market segment?

See the response to Section 8, above.

4. Are the communication channels and delivery mechanisms appropriate for the target market segment?

See the response to Section 8, above.

5. What can be done to more effectively overcome the identified market imperfections and to increase the rate of customer acceptance and implementation of each enduse measure included in the program?

See the response to Section 8, above.

8.2 IMPACT EVALUATION

(B) The utility shall develop methods of estimating the actual load impacts of each demand-side program and demand-side rate included in the utility's preferred resource plan to a reasonable degree of accuracy.

1. Impact evaluation methods. At a minimum, comparisons of one (1) or both of the following types shall be used to measure program and rate impacts in a manner that is based on sound statistical principles:

A. Comparisons of pre-adoption and post-adoption loads of program or demand-side rate participants, corrected for the effects of weather and other intertemporal differences; and

See the response to Section 8, above.

B. Comparisons between program and demand-side rate participants' loads and those of an appropriate control group over the same time period.

See the response to Section 8, above.

2. The utility shall develop load-impact measurement protocols that are designed to make the most cost-effective use of the following types of measurements, either individually or in combination:

A. Monthly billing data, hourly load data, load research data, end-use load metered data, building and equipment simulation models, and survey responses; or

See the response to Section 8, above.

B. Audit and survey data on appliance and equipment type, size and efficiency levels, household or business characteristics, or energy-related building characteristics.

See the response to Section 8, above.

8.3 DATA COLLECTION PROTOCOLS

(C) The utility shall develop protocols to collect data regarding demand-side program and demand-side rate market potential, participation rates, utility costs, participant costs, and total costs.

See the response to Section 8, above.

[i] Dates are estimated based on a December 2015 Commission approval of the programs.