KCP&L GREATER MISSOURI OPERATIONS COMPANY (GMO)

2011 ANNUAL RENEWABLE ENERGY STANDARD COMPLIANCE PLAN

CASE NO. EO- 2011-0278

Prepared in Compliance with 4 CSR 240-20.100

** PUBLIC **

15-April-2011

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TABLE OF CONTENTS

TABLE OF TABLES

TABLE OF FIGURES

SECTION 1: INTRODUCTION

KCP&L Greater Missouri Operations Company ("GMO"), a Missouri Corporation, has filed its 2011 Annual Renewable Energy Standard Compliance Plan ("2011 Plan") in compliance with the Missouri Public Service Commission's ("Commission") Electric Utility Renewable Energy Standard Requirements [4 CSR 240-20.100] that became effective September 30, 2010. Section (7) of the rule requires that each public utility file with the Commission a Renewable Energy Standard (RES) Compliance Plan by April 15 of each year.

Specifically, Section 7 (B) of the rule requires that the plan shall cover the current year and the immediately following two (2) calendar years. The RES compliance plan shall include, at a minimum:

A. A specific description of the electric utility's planned actions to comply with the RES;

B. A list of executed contracts to purchase RECs (whether or not bundled with energy), including type of renewable energy resource, expected amount of energy to be delivered, and contract duration and terms;

C. The projected total retail electric sales for each year;

D. Any differences, as a result of RES compliance, from the utility's preferred resource plan as described in the most recent electric utility resource plan filed with the commission in accordance with 4 CSR 240-22, Electric Utility Resource Planning;

E. A detailed analysis providing information necessary to verify that the RES compliance plan is the least cost, prudent methodology to achieve compliance with the RES;

F. A detailed explanation of the calculation of the RES retail impact limit calculated in accordance with section (5) of this rule. This explanation should include the pertinent information for the planning interval which is included in the RES compliance plan; and

G. Verification that the utility has met the requirements for not causing undue adverse air, water, or land use impacts pursuant to subsection 393.1030.4. RSMo, and the regulations of the Department of Natural Resources.

The 2011 Plan presents GMO's planned renewable compliance efforts and purchases that are currently underway and that will continue through 2011-2013 to achieve the requirements of 4 CSR 240-20.100.

SECTION 2: RES COMPLIANCE PLAN

Rule (7)(B) 1: The plan shall cover the current year and the immediately following two (2) calendar years. The RES compliance plan shall include, at a minimum -

2.1 <u>RULE (7)(B) 1 A:</u>

A specific description of the electric utility's planned actions to comply with the RES;

Rule 4 CSR 240-20.100 requires that an electric utility's RES requirement shall be no less than 2% of total electric sales, or total retail electric energy usage, delivered in each of the years 2011, 2012 and 2013 to its Missouri retail customers. In addition, no less than four-hundredths percent (.04%) of this requirement in 2011-2013 shall be derived from solar energy. This rule allows utilities to create and carry forward Renewable Energy Credits (RECs) to future calendar years. A REC will expire three (3) years from the date the electricity associated with that REC was generated. Further, RECs that are created by the generation of electricity by a renewable energy resource physically located in the state of Missouri shall count as one and twenty-five hundredths (1.25) RECs for purposes of compliance with this rule. GMO has secured adequate resources to meet its non-solar obligation for the years included in this Plan. In addition, GMO has secured adequate solar RECs to meet the projected 2011 solar requirements.

2.1.1 NON-SOLAR COMPLIANCE

GMO has received renewable energy generated at the Gray County wind facility located in Kansas via a Purchase Power Agreement (PPA), and will continue to do so past the 2011- 2013 Plan period. The GMO purchases generation under the PPA for based on approximately 60 MW of capacity. This wind energy has created a bank beginning in January 2008 of approximately 610,000 RECs attributable to Missouri customers that GMO intends to use to comply with its 2011 RES requirements which are delineated in Table 1. Accordingly, GMO expects to have significant banked RECs available to meet its RES requirements in 2012 and 2013 based on RECs unexpired at the end of 2010, along with continued generation approximating 200,000 MWh per year from the Gray County facility. Thus, no new non-solar renewable energy resources are required by GMO to comply with Missouri RES requirements during the Plan period.

2.1.2 SOLAR COMPLIANCE

GMO has purchased Solar RECs (SRECs) to meet its 2011 solar RES requirements shown in Table 1 below, with the contract details provided in the next section. The SRECs were registered in WREGIS (Western Renewable Energy Generation Information System) and have been transferred to NARR (North American Renewables Registry).

GMO continues to engage the energy markets to identify new solar renewable resource opportunities. Accordingly, GMO submitted Request for Proposals (RFPs) to meet solar requirements on December 23, 2010. A single RFP was issued to cover both KCP&L and Greater Missouri Operations Company (GMO) solar requirements.

The RFP provisions specified that up to 7,000 megawatt hours (MWh) of solar requirements are needed with a commercial on-line date (COD) of no later than December 2011, and an annual output of up to 18,000 MWh with a COD of no later than December 2013. The RFPs indicated that proposals may also be submitted to meet the 18,000 MWh annual output. Given the current market pricing for SRECs, the Company plans to rely on SRECs for compliance during the Plan period.

KCP&L will continue to evaluate the ability to construct and operate utility scale solar generation, and compare these results to other options. The evaluation of these results will be taken into consideration along with offers from third party solar developers and market prices of solar RECs.

2.1.3 STANDARD OFFER CONTRACT

On October 29, 2010, KCP&L and KCP&L-GMO filed a joint application asking the Commission to grant a variance from the Commission's renewable energy standards rule to allow them to delay filing a standard offer contract for the purchase of solar renewable energy credits for the 2011 compliance year beyond the November 1, 2010 submission date specified in the rule. KCP&L and KCP&L-GMO asked the Commission to allow the companies until November 1, 2011 to file a Standard Offer Contract tariff for compliance with the 2011 compliance year. The Commission issued an order effective December 25, 2010 allowing the variance. KCP&L and KCP&L-GMO continues to monitor the performance of the Ameren Standard Offer tariff as well as the many potential changes being proposed to the RES statue to determine the best course of action for the company and its customers.

2.2 RULE (7)(B) 1 B:

A list of executed contracts to purchase RECs (whether or not bundled with energy), including type of renewable energy resource, expected amount of energy to be delivered, and contract duration and terms;

To comply with Missouri 2011 solar RES requirements, GMO has purchased SRECs from 3Degrees Group, Inc. The contract is for SRECs only with no energy to be delivered, from a facility located outside of Missouri. The contract duration is from December 7, 2010 to March 31, 2011; 3,387 SRECs have been purchased. The SRECs were registered in WREGIS (Western Renewable Energy Generation Information System) and have been transferred to NARR (North American Renewables Registry).

2.3 RULE (7)(B) 1 C:

The projected total retail electric sales for each year;

GMO's historical, and Missouri forecasted retail sales, and associated RES requirements are provided in Table 1 below.

Table 1: Actual and Forecasted Retail Sales (MWh) and RES Requirement

		RES Requirements (MWh)			
		Generated outside MO		Generated in MO	
Year	Retail Sales (MWH)	Other than solar	Solar	Other than solar	Solar
2008	9,057,067				
2009	7,868,208				
2010	8,339,054				
2011	8,146,086	159,663	3,258	127,731	2,607
2012	8,308,523	162,847	3,323	130,278	2,659
2013	8,409,342	164,823	3,364	131,858	2,691

2.4 RULE (7)(B) 1 D:

Any differences, as a result of RES compliance, from the utility's preferred resource plan as described in the most recent electric utility resource plan filed with the commission in accordance with 4 CSR 240-22, Electric Utility Resource Planning;

Since GMO has sufficient wind resources to meet the RES non-solar requirements during the 2011-13 Plan period, no additional non-solar resources will be added to the GMO preferred resources plan as described in the most recent electric utility resource plan filed with the commission in accordance with 4 CSR 240-22, Electric Utility Resource Planning as a result of RES.

However, GMO's preferred resource plan assumed the installation of 1.79 MW of solar resources in 2011. As a result of the uncertainty around the RES rules and the cost of SRECs, GMO now plans to meet the RES solar requirements during the Plan period with purchased SRECs.

2.5 RULE (7)(B) 1 E

A detailed analysis providing information necessary to verify that the RES compliance plan is the least cost, prudent methodology to achieve compliance with the RES;

The PPA for the wind energy generated at Gray County being utilized for non-solar compliance has been in effect for several years prior to the passage of the RES rules and was economically justified at the time it was consummated. Since this facility is already in place, the wind energy provided by this facility represents the least cost approach for achieving non-solar compliance for the 2011 to 2013 Plan period.

2.5.1 3RD PARTY SOLAR SREC PROCUREMENT

For solar compliance, the purchase of SRECs through an industry broker is the least expensive alternative. The SRECs were purchased for compliance and do not represent actual power delivery. For 2011, KCP&L purchased 3,387 RECs at cost that is significantly less than the projected cost to add new solar capacity based on responses to the GMO solar RFP. Note that 1 SREC represents 1 MWh of solar generation. The all-in cost for compliance under a solar PPA or Ownership option is over $190 per MWh and over $220 per MWh, respectively.

2.5.2 SOLAR REBATES

Solar rebates are required by statute at $2.00 per watt and are limited to an individual maximum of $50,000. The number of rebates issued through March 31, 2011 totals 20 systems for $276,662 with an additional three systems that are pending and represent $108,880. Rebates are not paid until the individual system becomes operational.

2.6 RULE (7)(B) 1 F

A detailed explanation of the calculation of the RES retail impact limit calculated in accordance with section (5) of this rule. This explanation should include the pertinent information for the planning interval which is included in the RES compliance plan;

The retail rate impact, as calculated per subsection (5)(B), may not exceed one percent (1%) for prudent costs of renewable energy resources directly attributable to RES compliance. The retail rate impact shall be calculated on an incremental basis for each planning year that includes the addition of renewable generation directly attributable to RES compliance through procurement or development of renewable energy resources, averaged over the succeeding ten (10)-year period, and shall exclude renewable energy resources owned or under contract prior to the effective date of this rule.

For each Company, KCP&L and GMO, the direct costs of compliance for the three-year planning period (2011-2013) were compared to the revenue requirement forecast of a plan identified in previous filings. The individual company comparison plans were adjusted to remove all expenditures which were only included into the plan for compliance with 4 CSR 240.20-100 and/or Missouri Proposition C. These plans are called the "Non-Compliant Plans". Additional discussion of the development of these plans is located in Appendix A.

The summary of these calculations (average increase in annual revenue requirement) for GMO are provided below.

3-Year Average	0.14%
10-Year Average	0.04%

2.7 RULE (7)(B) 1 G

Verification that the utility has met the requirements for not causing undue adverse air, water, or land use impacts pursuant to subsection 393.1030.4. RSMo, and the regulations of the Department of Natural Resources.

The purchases of SRECs that will be used for GMO's RES solar compliance were registered in WREGIS (Western Renewable Energy Generation Information System) and have been transferred to NARR (North American Renewables Registry), and are also National Green-e Certified.

Wind generation specifically conforms to the eligible renewable energy resources listed in section (2) of Missouri Department of Natural Resources (MDNR) rule10.CSR 140-8.010. The wind facility in Gray County in Kansas is not owned by GMO and the owner-operator would be responsible for ensuring that it has not caused any undue adverse air, water, or land use impacts.

All generating facilities utilized by GMO to meet the requirements of the Missouri RES have, to its knowledge, received all necessary environmental and operational permits and are in compliance with any necessary federal, state and/or local requirements related to air, water and land use.

SECTION 3: APPENDIX A

PURPOSE: This report demonstrates compliance with 4 CSR 240-20.100(5) and determines the average rate impact within a ten-year period and incorporating the effects of future GHG legislation and costs.

3.1 RETAIL RATE IMPACT

Rule (5)(A): The retail rate impact, as calculated in subsection (5)(B), may not exceed one percent (1%) for prudent costs of renewable energy resources directly attributable to RES compliance. The retail rate impact shall be calculated on an incremental basis for each planning year that includes the addition of renewable generation directly attributable to RES compliance through procurement or development of renewable energy resources, averaged over the succeeding ten (10)-year period, and shall exclude renewable energy resources owned or under contract prior to the effective date of this rule.

For each Company, KCP&L and GMO, the direct costs of compliance for the three-year planning period (2011-2013) were compared to the revenue requirement forecast of a plan identified in previous filings. The individual company comparison plans were adjusted to remove all expenditures which were only included into the plan for compliance with 4 CSR 240.20-100 and/or Missouri Proposition C. These plans are called the "Non-Compliant Plans". A more complete discussion of the development of these plans is located in Section 2 of this report.

The increased revenue requirement from the RES compliance plan is calculated as a percent of the non-compliant plan revenue requirement. The summary of these calculations are given in Table 2 below.

Table 2: Average Increase – Annual Revenue Requirement

Average Increase in Annual Revenue Requirement			
KCPL		GMO	
3-Year Avg.	10-Year Avg.	3-Year Avg.	10-Year Avg.
0.14%	0.04%	0.14%	0.04%

3.2 TOTAL REVENUE REQUIREMENTS

Rule (5)(B): The RES retail rate impact shall be determined by subtracting the total retail revenue requirement incorporating an incremental non-renewable generation and purchased power portfolio from the total retail revenue requirement including an incremental RES compliant generation and purchased power portfolio.

The resulting revenue requirement for each Company's Non-Compliant Plan is detailed in the following table. Please note that revenue requirement values for KCP&L are only for the Missouri jurisdiction only.

Table 3: Revenue Requirement Forecast from Non-Compliant Plans

Expected Revenue Requirement ($M)		
Year	GMO	KCP&L
2011	901	874
2012	1,067	888
2013	1,164	920
2014	1,205	951
2015	1,244	1,184
2016	1,292	1,195
2017	1,337	1,236
2018	1,420	1,278
2019	1,448	1,349
2020	1,505	1,409

3.3 ALTERNATIVE PLANS

Rule (5)(B): The non-renewable generation and purchased power portfolio shall be determined by adding to the utility's existing generation and purchased power resource portfolio additional non-renewable resources sufficient to meet the utility's needs on a least-cost basis for the next ten (10) years. The RES-compliant portfolio shall be determined by adding to the utility's existing generation and purchased power resource portfolio an amount of renewable resources sufficient to achieve the standard set forth in section (2) of this rule and an amount of least-cost non-renewable resources, the combination of which is sufficient to meet the utility's needs for the next ten (10) years.

The Non-Compliant Plan for each company was selected from a larger group of plans analyzed within separate filed cases. One factor used in selecting the plan was determining that it had a low net present value of 20-year revenue requirements [NPVRR]. These plans were modeled and their financial performance was tested by subjecting them to the risk analysis developed in accordance with the GMO 2009 IRP.

For each Company the following tables show the projected amounts of renewable expenses associated with the resources and rebates needed to comply with the requirements of Missouri's Renewable Standard during the 2011-2013 Planning period.

Table 4: KCP&L Compliance Plan ** Highly Confidential **

KCP&L COMPLIANCE EXPENDITURES					
YEAR	S-RECS	S-REC PRICE	S-REC COST	REBATES	TOTAL
2011	3,663	[redacted]			
2012	3,712				
2013	3,742				

Table 5: GMO Compliance Plan ** Highly Confidential **

GMO COMPLIANCE EXPENDITURES					
YEAR	S-RECS	S-REC PRICE	S-REC COST	REBATES	TOTAL
2011	3,387	[redacted]			
2012	3,456				
2013	3,498				

3.4 RESOURCE PLAN SOURCES

Rule (5)(B): These renewable energy resource additions will utilize the most recent electric utility resource planning analysis.

The KCP&L Non-Compliant plan was Plan Number KP05B from the analysis for the Kansas State LaCygne Retrofit Predetermination filing under Kansas Docket number 11-KCPE-581-PRE with solar resources removed. The results of the LaCygne Retrofit Predetermination analysis were shared with the Missouri Commission Staff informally [no Missouri Commission Docket was opened to receive these results].

The GMO Non-Compliant plan was developed from the GMO Revised 2009 IRP filing on January 18, 2011 under Docket EE-2009-0237. For the RES Plan analysis, the solar resource additions were removed from the resource plan referred to as the Contingency Plan [Plan 11].

3.5 ANALYSIS DATA SOURCE

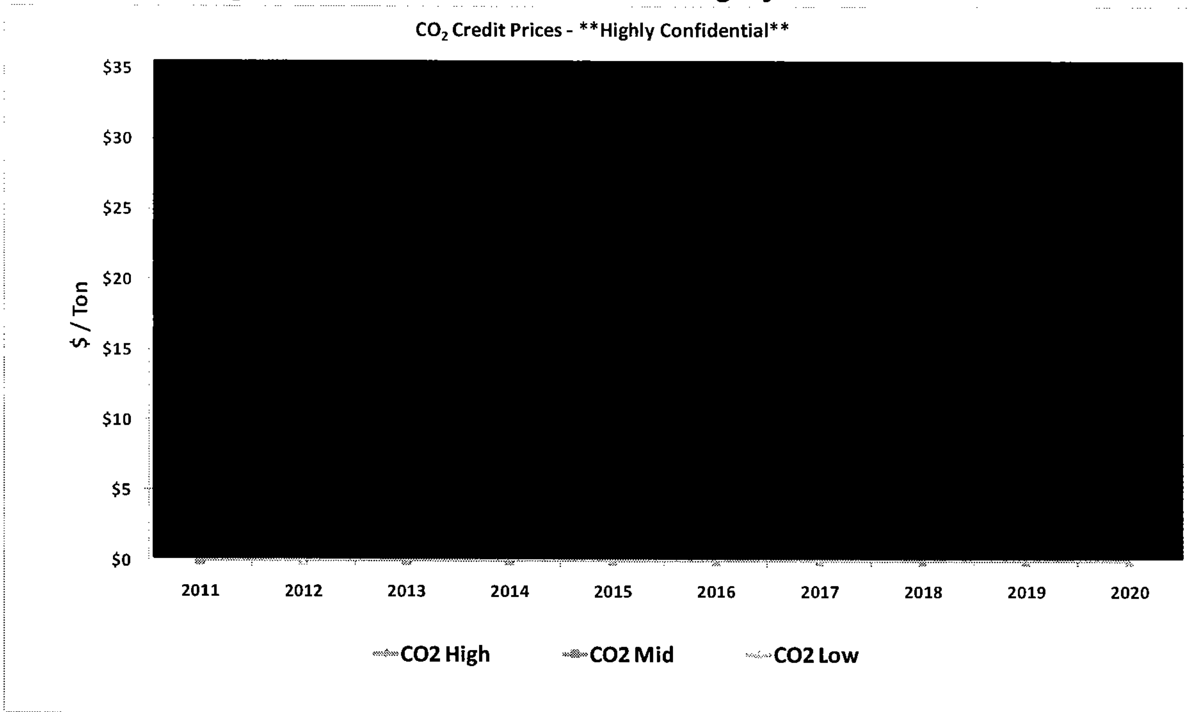
Rule (5)(B): These comparisons will be conducted utilizing projections of the incremental revenue requirement for new renewable energy resources, less the avoided cost of fuel not purchased for nonrenewable energy resources due to the addition of renewable energy resources. In addition, the projected impact on revenue requirements by non-renewable energy resources shall be increased by the expected value of greenhouse gas emissions compliance costs, assuming that such costs are made at the expected value of the cost per ton of greenhouse gas emissions allowances, cost per ton of a greenhouse gas emissions tax (e.g., a carbon tax), or the cost per ton of greenhouse gas

emissions reductions for any greenhouse gas emission reduction technology that is applicable to the utility's generation portfolio, whichever is lower. Calculations of the expected value of costs associated with greenhouse gas emissions shall be derived by applying the probability of the occurrence of future greenhouse gas regulations to expected level(s) of costs per ton associated with those regulations over the next ten (10) years. Any variables utilized in the modeling shall be consistent with values established in prior rate proceedings, electric utility resource planning filings, or RES compliance plans, unless specific justification is provided for deviations.

Since no additional non-solar or solar resources are being added during the 2011-2013 Plan period that are directly attributable to RES compliance during the plan period, there are no avoided fuel costs to be included in the comparison of the compliant and non-compliant plans.

The CO_2 credit prices used in the analysis to determine KCP&L's 10-year projected revenue requirements assumed three different levels of future CO_2 credit price risk. The values of these forecasts are presented in the table below. The high and low price forecasts were assumed to carry a 25% probability of occurrence each, while the mid price forecast carried a 50% probability.

Figure 1: CO_2 Price Forecast ** Highly Confidential **



3.6 RATE IMPACT COMPARISON

Rule (5)(B): The comparison of the rate impact of renewable and non-renewable energy resources shall be conducted only when the electric utility proposes to add incremental renewable energy resource generation directly attributable to RES compliance through the procurement or development of renewable energy resources.

The comparison of the annual compliance costs to the non-compliant Plan revenue requirement is detailed in the following tables. Please note that the revenue requirement for KCP&L is for the Missouri jurisdiction only.

Table 6: KCP&L Annual Rate Impact ** Highly Confidential **

KCP&L Annual Rate Impact			
YEAR	REV. REQ ($M)	RES EXPENSES ($M)	RATE IMPACT
2011	[redacted]		
2012			
2013			
2014			
2015			
2016			
2017			
2018			
2019			
2020			

Table 7: GMO Annual Rate Impact ** Highly Confidential **

GMO Annual Rate Impact			
YEAR	REV. REQ ($M)	RES EXPENSES ($M)	RATE IMPACT
2011	[redacted]		
2012			
2013			
2014			
2015			
2016			
2017			
2018			
2019			
2020			

3.7 REBATES

Rule (5)(C) Rebates made during any calendar year in accordance with section (4) of this rule shall be included in the cost of generation from renewable energy resources.

Rebates have been added to the analysis. Please see Table 4 and Table 5 to find the projected rebates to be paid to customers who install solar generation in compliance with the RES.

3.8 ADJUSTMENTS

Rule (5)(D) For purposes of the determination in accordance with subsection (B) of this section, if the revenue requirement including the RES-compliant resource mix, averaged over the succeeding ten (10)-year period, exceeds the revenue requirement that includes the non-renewable resource mix by more than one percent (1%), the utility shall adjust downward the proportion of renewable resources so that the average annual revenue requirement differential does not exceed one percent (1%). In making this adjustment, the solar requirement shall be in accordance with subsection (2)(F) of this rule. Prudently incurred costs to comply with the RES standard, and passing this rate impact test, may be recovered in accordance with section (6) of this rule or through a rate proceeding outside or in a general rate case.

The 10-Year average revenue requirement impact for both Companies is less than 1%. Therefore no adjustments are required to the plans.

3.9 FEDERAL PROGRAM COSTS

Rule (5)(E) Costs or benefits attributed to compliance with a federal renewable energy standard or portfolio requirement shall be considered as part of compliance with the Missouri RES if they would otherwise qualify under the Missouri RES without regard to the federal requirements.

Neither Company has a federal obligation at this time.