MISSOURI PUBLIC SERVICE COMMISSION

STAFF REPORT ON

KCPL GREATER MISSOURI OPERATIONS COMPANY (GMO)

ELECTRIC UTILITY RESOURCE PLANNING COMPLIANCE FILING

CASE NO. EE-2009-0237

December 10, 2009

JEFFERSON CITY, MISSOURI

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Summary of Staff's Review

On February 26, 2008, the Missouri Public Service Commission ("Commission") approved the Non-Unanimous Stipulation And Agreement presented in *In the Matter of the Resource Plan of Aquila, Inc. d/b/a Aquila Networks – MPS and Aquila Networks – L&P pursuant to 4 CSR 240-Chapter22*, Case No. EO-2007-0298. As part of that Non-Unanimous Stipulation and Agreement, Aquila agreed to file its next Chapter 22 compliance filing by August 5, 2009. On July 14, 2008, Great Plains Energy Incorporated closed its acquisition of Aquila. Afterward, Aquila and Kansas City Power & Light Company ("KCPL") integrated their operations, but remained separate legal entities. Eventually Aquila renamed itself to KCPL Greater Missouri Operations Company ("GMO").

On December 4, 2008, GMO filed, in this case, its request for waivers in connection with GMO's August 2009 integrated resource plan compliance filing. These waivers included eight (8) requests for relief from the requirements of the Load Analysis and Forecasting rule, 4 CSR 240-22.030; three (3) requests for relief from the requirements of the Supply-Side Resources Analysis rule, 4 CSR 240-22.040; three (3) requests for relief from the requirements of the Demand–Side Resource Analysis rule, 4 CSR 240-22.050; and one (1) request for relief from the requirements of the Risk Analysis and Strategy Selection rule, 4 CSR 240-22.070. The Commission granted every variance from Commission rule GMO requested in an order dated March 11, 2009, but made the variances subject to the conditions described in: 1) Commission Staff's January 13, 2009 corrected recommendation to grant GMO's request for waivers; and 2) the Missouri Department of Natural Resources ("MDNR") January 9, 2009 recommendation to grant GMO's request for waivers.

GMO filed its integrated resource plan (Volumes 1 through 8 and supporting appendices) on August 5, 2009, in this case. After five stakeholder meetings at which GMO explained its filing and answered stakeholder questions, GMO supplemented its August integrated resource plan filing on November 2, 2009.

During its limited review in this case, Staff reviewed and considered the following : 1) GMO's integrated resource plan filed on August 5, 2009; 2) GMO's supplemental resource plan filing of November 2, 2009; 3) documents and discussion related to the five stakeholder meetings held subsequent to GMO's compliance filing in this case; 4) the rule variances addressed in the non-unanimous stipulation and agreement the Commission approved in Case

No. EO-2007-0298 and those the Commission granted in this case on March 11, 2009; 5) for other purposes, the non-unanimous stipulation and agreement the Commission approved in Case No. EO-2007-0298; and 6) non-unanimous stipulation and agreement the Commission approved in Case No. EE-2008-0034 (KCPL integrated resource plan compliance filing).

This report contains a summary of GMO's compliance filing and preferred resource plan, Staff's overall view of GMO's compliance filing, and a summary of the deficiencies and concerns the Staff has identified, along with Staff's proposed remedy for each deficiency or concern it has identified.

Summary of GMO's Preferred Resource Plan

GMO developed 24 alternative resource plans, each of which includes supply-side resources (including renewable resources) and demand-side resources (including energy efficiency programs and demand response programs). GMO conducted its electric utility resource planning with the goal of meeting the objectives in 4 CSR 240-22.010. The net present value of revenue requirements ("NPVRR") over the 20-year planning horizon of each alternative resource plan was GMO's primary criteria for selection of its preferred resource plan. GMO's alternative resource plans are summarized below:

	Plan 1	Plan 2	Plan 3	Plan 4	Plan 5	Plan 6
DSM	All	None	All	None	All	All
Solar Begin: 2011	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C
Wind	400 MW Begin: 2016	400 MW Begin: 2016	600 MW Begin: 2016	500 MW Begin: 2014	300 MW Begin: 2018	400 MW Begin: 2016
Combustion Turbines	308 MW	462 MW	308 MW	462 MW	308 MW	308 MW
Combustion Fluidized Bed (100% Biomass)					50 MW	
Coal w/Carbon Capture and Sequestration						
10% Biomass Utilization in Existing Units						108 MW
Coal Retirement						
	Plan 7	**Plan 8**	**Plan 9**	**Plan 10**	**Plan 11**	**Plan 12**
DSM	All	None	All	None	All	All
Solar Begin: 2011	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C
Wind	400 MW Begin: 2016	400 MW Begin: 2016	600 MW Begin: 2016	500 MW Begin: 2014	300 MW Begin: 2018	800 MW Begin: 2016
Combustion Turbines	462 MW	616 MW	462 MW	616 MW	462 MW	308 MW
Combustion Fluidized Bed (100% Biomass)					50 MW	
Coal w/Carbon Capture and Sequestration						
10% Biomass Utilization in Existing Units						
Coal Retirement	108 MW	108 MW	108 MW	108 MW	108 MW	
	Plan 13	**Plan 14**	**Plan 15**	**Plan 16**	**Plan 17**	**Plan 18**
DSM	All	All	Existing	1%	All	All
Solar Begin: 2011	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C
Wind	400 MW Begin: 2016	400 MW Begin: 2016	800 MW Begin: 2016	800 MW Begin: 2016	900 MW Begin: 2012	900 MW Begin: 2010
Combustion Turbines	154 MW	308 MW	462 MW	0	308 MW	308 MW
Combustion Fluidized Bed (100% Biomass)						
Coal w/Carbon Capture and Sequestration	150 MW					
10% Biomass Utilization in Existing Units						
Coal Retirement						
	Plan 19	**Plan 20**	**Plan 21**	**Plan 22**	**Plan 23**	**Plan 24**
DSM	All	All	All	All	All	All
Solar Begin: 2011	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C	Mo. Prop C
Wind	900 MW Begin: 2010	900 MW Begin: 2010	900 MW Begin: 2010	900 MW Begin: 2012	900 MW Begin: 2012	900 MW Begin: 2012
Combustion Turbines	308 MW	308 MW	308 MW	308 MW	308 MW	308 MW
Combustion Fluidized Bed (100% Biomass)						
Coal w/Carbon Capture and Sequestration		150 MW	150 MW		150 MW	150 MW
10% Biomass Utilization in Existing Units	108 MW		108 MW	108 MW		108 MW
Coal Retirement						
Note: Combustion Turbines Not Needed Until 2022 Unless No DSM or Sibley 1&2 Retired						

GMO's preferred resource plan (Plan 22) has a NPVRR of $14,804 million, while Plan 16 has a NPVRR of $14,539 million ($265 million less than Plan 22). Plan 16 includes a hypothetical 1% incremental annual demand-side management ("DSM") impact based on achieving an incremental DSM energy reduction of 1% of annual retail energy for each of the first ten years of the planning horizon and then holding the DSM energy reduction at 10% of forecasted annual retail energy for years 11-20 of the twenty-year planning horizon. GMO believes Plan 16 is an unachievable resource plan, because GMO has not yet identified specific cost-effective DSM programs which will achieve the 1% incremental annual DSM impact over the first ten years of the 20-year planning horizon. Therefore, GMO selected the alternative resource plan with the second lowest NPVRR (Plan 22) as its preferred resource plan. Staff notes that all 24 of GMO's alternative resource plans have relatively close NPVRR values, as illustrated by the following:

- Plan with the lowest NPVRR is Plan 16 $14,539 million
- Plan with the second lowest NPVRR is Plan 22 $14,804 million
- Average of all plans except for Plan 16 (23 plans) $14,998 million
- Plan with the highest NPVRR is Plan 8 $15,204 million

The NPVRR of the preferred resource plan is only $600 million (3.9%) less than the alternative resource plan with the highest NPVRR (Plan 8) and is only $194 million (1.3%) less than the average of all alternative resource plans excluding Plan 16.

As a part of its compliance filing, GMO is seeking Commission approval of non-traditional rate making associated with expenditures for GMO's proposed DSM programs included in the preferred resource plan in this compliance filing. GMO proposes the following components in its non-traditional rate making request:

1. Return of and on DSM investments;
2. Recovery of lost margins; and
3. Performance mechanism for meeting or exceeding DSM program energy savings goals.

GMO has used the Midas™ model to calculate the impact of non-traditional rate making on GMO's earnings for the preferred resource plan to be: $0.58 million in 2010, $0.90 million in 2011 and $1.06 million in 2012.

The next page contains GMO's Capacity and Load Forecasts for 2009 through 2029 for the GMO's preferred resource plan (Plan 22).

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Results of Staff's Review

As a result of its limited review, Staff has identified six deficiencies and eight concerns regarding GMO's filings in this case. Staff's identified deficiencies and concerns are summarized in this section of Staff's report and are discussed in more detail for each rule in later sections of this report.

The results of Staff's review and suggested remedies are discussed in more detail throughout this report and are summarized as follows:

1. GMO's overall integrated resource plan compliance filing does not satisfy the policy objectives of 4 CSR 240-22 by not considering and analyzing demand-side resources on an equivalent basis with supply-side alternatives in the resource planning process. GMO should work with its stakeholder group, beginning not later than January 31, 2010, to develop a detailed work plan to remedy deficiencies and concerns identified in this report. The detailed work plan should include a schedule of work products and stakeholder group meetings which culminate in GMO filing a revised GMO integrated resource plan in this case which is in compliance with 4 CSR 240-22 not later than December 31, 2010.
2. While Staff cannot determine GMO's demand-side resource cost recovery proposal to be deficient in meeting the requirements of 4 CSR 240-22.080; at this time Staff cannot support GMO's proposal. Staff has begun discussions with stakeholders regarding the intent of the Missouri Energy Efficiency Investment Act and Staff plans to develop policies and rules to implement the Missouri Energy Efficiency Investment Act as soon as it gets revisions of the Chapter 22 rules to the Commission. Staff proposes that GMO continue the current regulatory asset treatment of demand-side costs until the Commission has established policies and rules to implement the Missouri Energy Efficiency Investment Act.

During its limited review of GMO's integrated resource plan compliance filing, Staff has identified, for rules within 4 CSR 240-22, the following deficiencies and concerns:

Regarding load analysis and forecasting, Staff has identified three concerns: 1) the severity of the current economic recession is not reflected in GMO's base-case load forecast;

2) GMO only consulted one expert regarding the subjective probabilities of its base-case load forecast. That one expert also created GMO's load forecasts, and the biases of that one expert are passed through to GMO's integrated resource analysis and risk analysis and strategy selection; and 3) the probabilities GMO assigned to its high-case, base-case and low-case load forecasts do not adequately reflect the probabilities and impacts of potential future legislation setting energy efficiency resource standards affecting Missouri.

Regarding demand-side resource analysis, Staff has identified four filing deficiencies as a result of: 1) insufficient and untimely analysis within end-use measure menu creation of rate structures, demand-response research, multifamily research, and energy efficient street lighting; 2) no identification, screening, or development of technical potential of end-use measures for the Energy Optimizer and MPower programs; 3) lack of analysis of residential plug load items; and 4) DSM programs that only last for five years of the 20-year planning horizon. Staff has identified three concerns as a result of: 1) marketing work done for KCPL was also used for GMO, with no research done into whether the two utility service areas have different needs; 2) lack of discussion of MPower and Energy Optimizer moratoriums, program design and delivery processes; and 3) Change-A-Light program in the preferred resource plan is not the same as the revised Change-A-Light program discussed in the Customer Programs Advisory Group.

Regarding integrated resource analysis, Staff believes that GMO has failed to meet all of the planning objectives of 4 CSR 240-22.060(1), as well as Section 393.1075, RSMo. Supp. 2009 (SB 376), by not considering and analyzing demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process, since each of GMO's alternative resource plans with the "All DSM" option are based on implementation of new demand-side resources only in the first year of the 20-year planning horizon, while supply-side resources are implemented at various times throughout the 20-year planning horizon.

Regarding risk analysis and selection, Staff is concerned that GMO did not augment its list of uncertain factors to include other "special contemporary issues." Specifically, GMO did not identify the Smart Grid (or similar transmission and distribution advanced technologies) or legal mandates for energy efficiency resource standards ("EERS") as uncertain factors to be screened when developing its list of critical uncertain factors. Staff is

also concerned that GMO eliminated Plan 16 from consideration as its preferred resource plan simply because GMO considered Plan 16 to be an unachievable "hypothetical resource plan." Staff believes that Plan 16 illustrates the importance of a more aggressive portfolio of demand-side resources over the entire 20-year planning horizon that should appear in a number of the alternative resource plans GMO screens.

Staff's concerns with risk analysis and strategy selection, when coupled with GMO's failure to consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives during the 20-year planning horizon of the resource planning process, result in GMO selecting a preferred resource plan which does not meet all of the objectives of 4 CSR 240-22.

Staff finds that the overall severity of these deficiencies and concerns, when considered together, is great enough that GMO should work with its stakeholder group, beginning not later than January 31, 2010, to develop a detailed work plan to remedy deficiencies and concerns identified in this report. The detailed work plan should include a schedule of work products and stakeholder group meetings which culminate in GMO filing a revised GMO integrated resource plan in this case which is in compliance with 4 CSR 240-22 not later than December 31, 2010. Stakeholder group should serve an advisory role only, to help GMO plan for GMO activities to correct deficiencies and concerns. If all deficiencies and concerns can not be remedied in time for GMO to file a revised integrated resource plan in this case, not later than December 31, 2010, then GMO and its stakeholder group should agree on a revised schedule to remedy a specified limited number of deficiencies and/or concerns and will document and file such an agreement in this case at the earliest date possible. In any event, GMO should file a revised integrated resource plan in this case not later than December 31, 2010.

Further, Staff notes as a result of its review of the non-unanimous stipulation and agreement the Commission approved in Case No. EE-2008-0034 (KCPL integrated resource plan filing), that the following agreement was made by KCPL regarding the MDNR deficiencies numbered 3, 4, 10 and 12.

> ***KCL&L agrees to enter advisory discussions with Parties to facilitate discussion of appropriate end-use measures, potential DSM program portfolios, review DSM experience of other jurisdictions, and review potential DSM program timelines. Parties will act in an advisory role in***

> ***this advisory process. KCP&L proposes to commence this process in the 3rd quarter of 2009 and, in consultation with the Parties, will establish the discussion topics, timelines for discussion of topics, and response times allotted for parties. If the Parties are unable to resolve any dispute that arises during the advisory process, the matter may be brought to the Commission for decision.***
> (emphasis added)

Staff notes that KCPL's first meeting with Parties as a result of the non-unanimous stipulation and agreement the Commission approved in Case No. EE-2008-0034 did not occur until December 8, 2009 and that the topics concerning the MDNR deficiencies numbered 3, 4, 10 and 12 were not discussed during this meeting. Since the same people are involved in the preparation and filing of the KCPL's integrated resource plan and GMO's integrated resource plan, Staff believes there exists an opportunity to consolidate the stakeholder group processes in this case with stakeholder group processes in Case No. EE-2008-0034, in order to more efficiently resolve deficiencies and concerns in both cases.

Staff's review and discussion concerning GMO's demand-side resource cost recovery proposal is in the **4 CSR 240-22.080 Filing Schedule and Requirements** section of this report.

List of Deficiencies

1. **Insufficient and untimely analysis of 'rate structures,' 'demand response research,' multifamily research, and 'energy efficient street lighting' within end-use measure menu creation – 4 CSR 240-22.050(1); 22.020(17) and (18); 22.050(5).**

2. **No identification of, development of or screening, of the technical potential of end-use measures for the Energy Optimizer program or for the MPower program – 4 CSR 240-22.050(1), 22.050(3), 22.050(6)(C), and 22.050(4).**

3. **Lack of analysis of residential 'plug load' items – 4 CSR22.050(1) and 22.050(5).**

4. **DSM programs only last for the first five years of the twenty year planning horizon – 4 CSR 240-22.050(11).**

5. **GMO did not meet the requirements of 4 CSR240-22.060(1), because GMO did not design its alternative resource plans to satisfy at least the objectives and priorities identified in 4 CSR 240-22.010(2). Specifically, the requirement of 4 CSR 240-22.010(2)(A) to consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process is not satisfied – 4 CSR 240-22.060(1); a requirement echoed by Section 393.1075 RSMo. Supp. 2009.**

6. **GMO has failed to meet the requirements of 4 CSR 240-22.070(6)(A) in that the preferred resource plan does not "strike an appropriate balance between the various planning objectives specified in 4 CSR 240-22.010(2), more specifically 4 CSR 240-22.010(2)(A).**

List of Concerns

A. **GMO's energy and demand forecasts do not properly account for changing economic conditions – 4 CSR240-22.030(5).**

B. **GMO only consulted one expert when determining the subjective probabilities assigned to its high-case, base-case and low-case load forecasts.**

C. **The subjective probabilities GMO assigned to its high-case, base-case and low-case load forecasts do not properly account for the increasing probability and the impact of future federal and/or state legislation regarding energy efficiency resource standards (EERS) – 4 CSR420-22.030(7).**

D. **Marketing work done for KCPL was also used for GMO, with no research done into whether the service areas of the two utilities have different needs - 4 CSR 240-050(5).**

E. **GMO does not discuss the MPower and Energy Optimizer moratoria, program designs or delivery processes – 4 CSR 240-22.050(6).**

F. **The Change-A-Light program in GMO's preferred resource plan is not the same programs as the revised Change-A-Light program discussed by the Customer Program Advisory Group – 4 CSR 240-22(6)(D).**

G. **GMO did not treat the list of uncertain factors contained in 4 CSR 240-22.070(2) as a "minimum requirement" and did not add any additional uncertain factors that are "special contemporary issues," issues including Smart Grid and EERS – 4 CSR 240-22.070(2).**

H. **GMO eliminated Plan 16 from consideration as its preferred resource plan simply because GMO considered Plan 16 to be an unachievable resource plan – 4 CSR 240-22.070(6).**

4 CSR 240-22.030 Load Analysis and Forecasting

SUMMARY

The stated purpose of 4 CSR 240-22.030, Load Analysis and Forecasting, is to set the "minimum standards for the maintenance and updating of historical data, the level of detail required in analyzing and forecasting loads, and for the documentation of the inputs, components and methods used to derive the load forecasts."

In its limited review of GMO's load analysis and energy and demand forecasts, Staff found no deficiencies concerning compliance with this rule. However, Staff is concerned that GMO's load forecasts do not properly account for the severity of the current economic recession. Staff is also concerned that GMO only consulted one expert (who also developed the load forecasts) when developing subjective probabilities for GMO's high-case, base-case and low-case load forecasts. Further, Staff is concerned that this expert may not have properly considered the possibility and impact of future legislation regarding energy efficiency resource standard(s) on GMO's peak and energy forecasts.

GMO requested the Commission to grant it variances from specific provisions of 4 CSR 240-22.030, each of which the Commission granted. These variances allowed GMO some flexibility in complying with all or part of the following sections:

4 CSR 240-22.030(1)(D)1.	Start date of historical energy data base
4 CSR 240-22.030(1)(D)2.	Start date of historical peak and hourly load data base
4 CSR 240-22.030(3)(B)2.	Estimate of end-use energy and demand
4 CSR 240-22.030(4)(A)	Load profiles for class and for net system load
4 CSR 240-22.030(4)(B)	Calibrate class load profiles to net system load profiles
4 CSR 240-22.030(5)(B)2.B.	End-use detail
4 CSR 240-22.030(8)(B)2	Plots of coincident demands showing end-use components
4 CSR 240-22.030(8)(E)1	Plots of hourly load profiles with end-use components

CONCERNS

A. GMO's energy and demand forecasts do not properly account for changing economic conditions – 4 CSR240-22.030(5).

GMO contracted with Moody's Economy.com to obtain historical and forecasted economic drivers that GMO used in its load forecasting models. The Moody's dataset was issued in September 2008 and represents the best economic data available at that time. In developing the September 2008 dataset Moody's made assumptions with regards to the length

and severity of the current economic downturn and the shape and duration of a future economic recovery. For its September 2008 release Moody's also lowered its long-term labor force participation rate from previous estimates. Staff's concern is that the economic outlook (for a more severe than previously expected recessionary period) has brought an additional level of uncertainty into GMO's peak and energy forecasts, which may render GMO's load forecasts obsolete before the next compliance filing.

To resolve this concern, GMO should update its load analysis and load forecasts. Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

B. GMO only consulted one expert when determining the subjective probabilities assigned to its high-case, base-case and low-case load forecasts.

The Staff is concerned that, when developing its subjective probabilities for its high-case, base-case and low-case load forecasts, the GMO expert that developed the probabilities did not adequately consider the probability and impact of future trends in electricity usage resulting from pending federal and/or state legislation concerning energy savings. Since GMO only consulted one expert regarding the subjective probabilities of the load forecasts, and he is the same expert who developed the load forecasts, his biases are passed through to GMO's risk analysis.

To resolve this concern, GMO should have more than three decision-makers assign probabilities to its high-case, base-case and low-case load forecasts. Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

C. The subjective probabilities GMO assigned to its high-case, base-case and low-case load forecasts do not properly account for the increasing probability and the impact of future federal and/or state legislation regarding energy efficiency resource standards (EERS) – 4 CSR420-22.030(7).

The Staff is concerned that, when developing its subjective probabilities for its high-case, base-case and low-case load forecasts, GMO's expert did not adequately consider the probability and impact of future trends in electricity usage resulting from pending federal and/or state legislation concerning energy savings. This lack of consideration resulted in a subjective probability for the low-case load forecasts that is likely too low (in this case 10%)

and a subjective probability for the base-case load forecast that is likely too high (in this case 80%).

There are nineteen states that have passed legislation which will dampen the growth of electricity usage as a result of more stringent building codes and appliance efficiency standards, greater incentives for and market penetration of combined heat and power ("CHP"), and DSM. States that have legislated statewide EERS include: California, Colorado, Connecticut, Hawaii, ***Illinois, Iowa***, Maryland, Michigan, Minnesota, Nevada, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, Vermont, Virginia and Washington.

There is also pending federal legislation which would mandate EERS minimum standards for all states, including Missouri. Federal H.R. 889 (Markey)(see Addendum A), if passed into law, will amend the Public Utility Regulatory Policies Act of 1978 to establish a federal energy efficiency resource standard for retail electricity and natural gas distributors as follows:

Proposed Federal Energy Efficiency Resource Standard (EERS)

Sector	Electricity		Natural Gas	
Year	Annual Savings	Cumulative Savings	Annual Savings	Cumulative Savings
2011	0.33%	0.33%	0.25%	0.25%
2012	0.67%	1.00%	0.50%	0.75%
2013	1.00%	2.00%	0.75%	1.50%
2014	1.25%	3.25%	1.00%	2.50%
2015	1.25%	4.50%	1.00%	3.50%
2016	1.50%	6.00%	1.25%	4.75%
2017	1.50%	7.50%	1.25%	6.00%
2018	2.50%	10.00%	1.25%	7.25%
2019	2.50%	12.50%	1.25%	8.50%
2020	2.50%	15.00%	1.50%	10.00%

To resolve this concern, GMO should evaluate the probability and impact of future legislation of EERS affecting Missouri. GMO's decision-makers should reassess the subjective probabilities GMO assigned to its high-case, base-case and low-case load forecasts

based on GMO's evaluation of the probability and impact of a future EERS affecting Missouri. GMO should describe and document its reassessment of the subjective probabilities assigned to its load forecasts based on this consideration. Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

4 CSR 240-22.040 Supply-Side Resource Analysis

SUMMARY

Rule **4 CSR 240-22.040, Supply-Side Resource Analysis,** requires GMO to review a wide variety of supply-side resource options and to determine cost estimates for each type of resource. Resource options are to be ranked based upon their relative annualized utility costs, as well as based upon their probable environmental costs. Resources which do not have significant disadvantages pass this pre-screening process and are to be included in the integrated resource analysis process used to select a preferred resource plan.

GMO reviewed nuclear, fossil fuel, and renewable energy resource options, as well its transmission and distribution system options. GMO evaluated fifty-four technologies based on capital, fixed and variable cost estimates from Electric Power Research Institute ("EPRI"), responses to GMO-issued requests for proposals, consultants, various reports, and GMO in-house experts. GMO ranked these options to obtain a high, base and low range of costs based on a broad range of technology development, probable environmental regulations and cost uncertainties. GMO excluded some technologies from its further review, because the technologies are in the developmental stage, resource inadequacy or absence of geological features required for their implementation or use by GMO. GMO's supply-side resource screening analysis identified nineteen potential cost-effective technologies that it passed on to consider further in its integrated resource analysis.

GMO evaluated the efficiency, life extension, environmental enhancements and retirement scenarios of the existing facilities it relies upon for capacity and power. In addition, GMO evaluated purchased power alternatives by issuing an RFP for purchased power agreements. GMO also analyzed its transmission and distributions systems as required by the Commission's Chapter 22 rules. GMO's "Transmission Submission" documentation is in Appendix 4G of its IRP filing.

With respect to **4 CSR 240-22.040 Supply-Side Resource Analysis**, GMO requested, and the Commission granted, variances from the following specific provisions of that rule:

4 CSR 240-22.040(2)(B)2. and (2)(B)4.	Levels of mitigation for environmental requirements
4 CSR 240-22.040(3) and (6)	Analysis of existing and planned interconnected generation resources
4 CSR 240-22.040(8)(A) and (8)(D)2.	Fuel price forecasts

Based on its limited review, Staff concludes GMO's Supply-Side Resource Analysis filing meets the requirements of 4 CSR 240-22.040, and Staff has identified no concerns or deficiencies.

4 CSR 240-22.050 Demand-Side Resource Analysis

SUMMARY

Rule **4 CSR 240-22.050, Demand-Side Resource Analysis,** "specifies the methods by which end-use measures and demand-side programs shall be developed and screened for cost-effectiveness. It also requires the ongoing evaluation of end-use measures and programs, and the use of program evaluation information to improve program design and cost effectiveness analysis."

GMO applied for and received from the Commission variances from the following subsections of this rule:

4 CSR 240-22.050(2)(C)1.	Calculation of total avoided cost for DSM
4 CSR 240-22.050(2)(C)2. and (2)(D)	Calculation of avoided capacity cost
4 CSR 240-22.050(3)(F) and (3)(G)	Energy efficiency cost effectiveness tests

Staff's overall assessment of GMO's demand-side analysis is mixed, but somewhat positive. On the one hand, it is encouraging that GMO is screening both new and many of its existing demand-side programs, in addition to considering minor modifications to its current programs.

On the other hand, there are gaps and blind spots in the current analysis regarding several issues. There are gaps GMO has identified as matters that need to be done for GMO's next resource plan - including multifamily residential analysis and examination of alternative rate designs, but that identification does not assist GMO's current resource plan. Staff encourages GMO to include the results of these future analyses as they occur, and not wait until GMO's next resource plan compliance filing nearly two years from now before implementing any changes its analyses might support.

DEFICIENCIES

1. Insufficient and untimely analysis of 'rate structures,' 'demand response research,' multifamily research, and 'energy efficient street lighting' within end-use measure menu creation – 4 CSR 240-22.050(1); 22.020(17) and (18); 22.050(5).

In Table 4 of Volume 5 ("Residential End-Use Measures") of its integrated resource plan filed in this case, GMO lists the end use measures GMO's consultants RLW Analytics ("RLW") and Morgan Marketing Partners ("MMP") identified for GMO's residential class customers. There are no end-use measures listed in that table that meet the criteria of an

"energy management measure," as defined in 22.020(18). Additionally, this list does not include the end-use measures contained within the "Energy Optimizer" residential demand response program, listed on page 204 of Volume 5 of GMO's integrated resource plan under the category of "Existing Programs."

The screening of end use measures, to see if they are cost effective and should be included in GMO's offering of demand-side programs is addressed in Rule 4 CSR 240-22.050(3). GMO's screening of residential end-use measures as described in Section 3 of Volume 5 of GMO's integrated resource plan does not include any end-use measures related to GMO's Energy Optimizer program.

Staff has requested from GMO, but not received, a listing of which end-use measures are associated with each GMO program. The listing GMO included in its supplemental filing in this case lacks the specificity required to match the end-use measures with each GMO program, especially for existing programs, to ensure GMO is screening all end-use measures from its existing programs.

While GMO has presented many areas of current research in Volume 5, Section 5 of its integrated resource plan, it also has identified areas where research is needed but has not been done. These are listed below:

a. Table 69 in Volume 5, is "Demand Response Program Research," a schedule of when Demand Response research will take place for the next Resource Planning filing.
b. Table 70, Volume 5, is a schedule for 'Alternative rate research schedule.'
c. Table 71, Volume 5, is a schedule for 'Evaluation of energy efficient street lighting.'

Resource planning is a process, not something that occurs approximately every three years with the filing of a resource acquisition strategy. While it is admirable that GMO is planning to complete research into alternate rate schedules by July 2010, this planned future research does not relieve GMO from its obligation to properly plan for this compliance filing.

To resolve this deficiency, GMO should commit to doing the following: (1) screen end-use measures related to these activities, and report the results to GMO's stakeholder group; (2) develop technical potential of these end-use measures, and report GMO's results to interested stakeholders; (3) develop programs of related end-use measures, including

implementation plans, schedules, marketing strategies, and evaluation plans, submitting these to GMO's stakeholder group; (4) produce integration results related to these programs, and report its results to GMO's stakeholder group; (5) produce an implementation schedule for adoption of any plans that GMO chooses through the integration process; and (6) if GMO includes new programs in its preferred resource plan, file with the Commission the documents required by 22.080(10) regarding how GMO's preferred resource plan filed in this case is no longer appropriate. Resolution of this deficiency should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

2. No identification of, development of or screening of the technical potential of end-use measures for the Energy Optimizer program or for the MPower program – 4 CSR 240-22.050(1), 22.050(3), 22.050(6)(C), and 22.050(4) :

In Table 4 of Volume 5 ("Residential End-Use Measures") of its integrated resource plan filed in this case, GMO lists the end use measures GMO's consultants RLW and Morgan Marketing Partners MMP identified for GMO's residential class customers. There are no end-use measures that meet the criteria of an "energy management measure," as defined in 4 CSR 240-22.020(18). As such, this list does not include the end-use measures of GMO's "Energy Optimizer" residential demand response program, listed on page 204 of Volume 5 of GMO's integrated resource plan under the category of "Existing Programs." GMO's screening of end use measures, to see if they are cost effective and should be included in demand-side programs, is shown in Section 3, Volume 5 of GMO's integrated resource plan. The residential end-use measures GMO screened within that section, as listed in Table 51, do not contain any end-use measures related to GMO's Energy Optimizer program.

Similarly, none of the commercial and industrial ("C&I") category end-use measures listed within Volume 5 are described for the MPower program.

As GMO has not screened the end-use measures of the Energy Optimizer program, GMO does not comply with 4 CSR 240-22.050(6)(C), which requires GMO to assemble programs of end use measures that are "cost effective as measured by the screening test."

To better understand whether GMO screened end-use measures of existing GMO demand-side programs in GMO's current integrated resource plan, Staff requested from GMO a listing of each end-use measure included in each program. In its supplemental filing, GMO

provided an incomplete list of end-use measures for most of its existing programs, but none for GMO's Energy Optimizer Program.

Additionally, GMO has provided no listing of the 'technical potential' of the end-use measures of either the Energy Optimizer or the MPower programs.

To resolve this deficiency, GMO should provide: (1) a list of end-use measures for its Energy Optimizer and MPower programs; (2) the results of its screening of all end-use measures related to the Energy Optimizer and MPower programs; (3) the technical potential of the end-use measures of the Energy Optimizer and MPower programs; and (4) a revised integration of GMO's integrated resource plan that includes the results from GMO's end-use measure screening of the Energy Optimizer and MPower programs end-use measures. Resolution of this deficiency should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

3. Lack of analysis of residential 'plug load' items – 4 CSR22.050(1), and 22.050(5)

In Table 49 of volume 5, titled "Other Office Equipment" of its integrated resource plan filed in this case, GMO lists four end-use measures it screened for cost effectiveness. In Table 54 of Volume 5 of its integrated resource plan filed in this case, GMO lists these four (4) computer related C&I potential end-use measures, tabbed as "C&I Other2," "C&I Other3," "C&I Other4," and "C&I Other5." When Staff asked GMO whether these end-use measures should be screened on the residential side, GMO representatives responded in a September 19, 2009 meeting that this could be a "potential area of research."

Since the quantity GMO assessed as reflected in Volume 5, Table 49 of its integrated resource plan is on a 'per unit' basis, this is not an issue of scale; each end-use measure in this case appears to affect one computer. Thus, at the very least, this seems like a good opportunity as an end-use measure to be researched on the residential side.

Additionally, plug loads are to be reviewed in the KEMA multifamily residential study as described beginning on page 181 of Volume 5 of GMO's integrated resource plan:

> Plug load electronics will be collectively reviewed as one potential measure. Under this measure the following technologies will be reviewed: a) televisions; b) set top boxes (cable or satellite); c) home computers/notebooks; d) printers; e) wireless routers; f) modems; g) compact audio systems; h) home entertainment systems; and i) DVD players. The qualification threshold for each of these measures will be whether or not they meet Energy Star standards.

It seems reasonable that items of this nature should be reviewed on both a single family and a multifamily basis.

To resolve this deficiency, GMO should commit to filing in this case residential computer usage research. If GMO wishes to utilize research or information from another study, GMO should file its explanation of why that is appropriate before it files its next compliance filing.. Resolution of this deficiency should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

4. DSM programs only last for the first five years of the twenty year planning horizon, 4 CSR 240-22.050(11).

Rule **4 CSR 240-22.050(11)** requires estimation of program impacts over the full 20 year planning horizon of the resource planning period. This is exemplified in 4 CSR 240-22.050(7)(A), the rule subsection pertaining to screening demand side programs:

> (A) The utility shall estimate the incremental and cumulative number of program participants and end-use measure installations due to the program and the incremental and cumulative demand reduction and energy savings due to the program in each avoided cost period in each year of the planning horizon.

Beginning on page 243 of Volume 5 of GMO's integrated resource plan, appear tables for each program where GMO lists such things as the program metrics (TRC, RIM, etc.) along with GMO's estimates of the number of participants for each year of the twenty-year horizon, GMO's estimate of the funds spent for the program for each year of the twenty-year horizon, and other expected program impacts.

On these tables, for programs listed after Home Performance with Energy Star on page 245, there are neither new participants nor expected cost after year five.

GMO representatives have stated that these programs run for the full twenty years of the planning horizon in the actual modeling, and that the reporting at the end of Volume 5 of its integrated resource plan is in error.

If in error GMO's supplemental filing for GMO's integrated resource plan, did not correct this error. For instance, beginning on page 16 of the Supplemental Filing, Table 8, an alternative resource plan including the "ALL DSM" option, shows negative "Energy Efficiency Annualized" in years 2020 through 2029.

To resolve this deficiency, GMO should: (1) file a revised version of the tables on pages 245-280 of Volume 5 of its integrated resource plan with the full twenty years of

demand side programs; and (2) state affirmatively whether the program metrics listed in Volume 5 are for the programs with the full twenty years of program spending, or with only the five years listed. Resolution of this deficiency should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

CONCERNS

D. Marketing work done for KCPL was also used for GMO, with no research done into whether the service areas of the two utilities have different needs - 4 CSR 240-22.050(5)

In a meeting with GMO on September 19, 2009, for discussing the demand-side portion of the integrated resource plan compliance filing, GMO reported GMO used the marketing information prepared by Morgan Marketing Partners KCPL's most recent resource plan filing as the basis for program development for this compliance filing. While there are some similarities between the service areas of KCPL and GMO, there are also differences. For example, the GMO has much higher percentage of rural customers than does KCPL. The techniques necessary to engage customers could differ in trying to reach customers spread more thinly over a wider area. Beyond marketing efforts, this could also affect program design.

If GMO wishes to use the marketing information developed for an affiliated company, it should provide the basis for why that information is appropriate in GMO's resource plan filing.

To resolve this concern, GMO should prepare and provide to its stakeholder group an explanationof how demand-side marketing information prepared for KCPL is appropriate for GMO. Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

E. GMO does not discuss the MPower and Energy Optimizer moratoria, program designs and delivery processes – 4 CSR 240-22.050(6).

Within the program design for the MPower, beginning on Volume 5, page 218, or for the Energy Optimizer Program, beginning on Volume 5, page 217, there is no description of any "moratorium" process, under which GMO could potentially, under its current tariff for the program, stop enrolling new customers in the program.

As GMO has recently implemented a moratorium on enrolling new customers for its MPower program, Staff is concerned regarding the implementation of any future moratorium, the impacts of future moratoriums on program design, as well as the affect of any future moratoriums on the potential energy and demand savings of its demand response programs.

To resolve this deficiency, GMO should file in this case : 1) a written description for the basis of any future 'moratorium' of these demand response programs; 2) an explanation of whether this "moratorium' was included in the development of market or technical potential of end-use measures related to these programs; and 3) what the impact is of this moratorium on program outcomes – i.e., what would the expected energy and demand savings for these programs be in absence of any possible moratorium. Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

F. The Change-A-Light program in GMO's preferred resource plan is not the same as the revised Change-A-Light program discussed by the Customer Program Advisory Group – 4 CSR 240-22.050(6)(D)

This is a question of which version of the "Change-A-Light" program is going to be done going forward, and whether there is a need to adjust the potential of the program due to a possible change in program design.

In the KCPL / GMO CPAG, GMO has presented as the going forward version of the "Change-A-Light" program a program that includes a 'door hanging' element, where compact florescent light blubs ("CFLs") would be delivered to customer's homes.

The "Change A Light" program description of page 209 of Volume 5 has the old version of the plan, described in part as:

Each participating customer completes a rebate form at checkout, provides the completed form to the retailer, and then receives a rebate for each applicable CFL purchased as an instant credit.

Staff has concerns about whether the redesigned version of the program, on a going forward basis, has any changes in the expected participation, energy or demand savings, etc., as listed beginning on page 243 of Volume 5. Essentially, GMO should have this document as up to date as possible, reflecting this updated version of the "Change A Light" program.

To resolve this deficiency, GMO should: 1) provided an updated description of the "Change-A-Light" program to replace page 209 of volume 5; and 2) either provide new information regarding program participation, energy and demand savings, etc. for the new version of the "Change-A-Light" program, or provide an explanation for why the expected impact of the new implementation procedure is no different from the previous version of the "Change-A-Light' program. Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

4 CSR 240-22.060 Integrated Resource Analysis

SUMMARY

This rule requires the utility to design alternative resource plans to meet the planning objectives identified in 4 CSR 240-22.010(2) and sets minimum standards for the scope and level of detail required in resource plan analysis, and the logically consistent and economically equivalent analysis of alternative resource plans.

GMO developed 24 alternative resource plans each of which included demand-side resources and supply-side resources to meet GMO's load forecasts and renewable resources to meet the legal mandates of Proposition C. Each alternative resource plan was analyzed through integrated resource analysis required by this rule to calculate values for specified performance measures. The Midas™ model was used for the integrated resource analysis.

GMO did not apply for any waivers to this rule.

As a result of its limited review, Staff finds that GMO has failed to meet all of the planning objectives 4 CSR 240-22.060(1) by not considering and analyzing demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process.

DEFICIENCIES

5. **GMO did not meet the requirements of 4 CSR240-22.060(1), because GMO did not design its alternative resource plans to satisfy at least the objectives and priorities identified in 4 CSR 240-22.010(2). Specifically, the requirement of 4 CSR 24022.010(2)(A) to consider and analyze demand-side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process is not satisfied – 4 CSR 240-22.060(1).**

Each of GMO's alternative resource plans implements new demand-side resources only in the first year of the 20-year planning horizon, while supply-side resources are implemented at various times throughout the 20-year planning horizon. As a result, additional demand-side resources are never given the opportunity to compete with new supply-side resources any time other than the first year during the entire 20-year planning horizon period in the integration resource analysis process (4 CSR 240-22.060) and in the risk analysis and selection process (4 CSR 240-22.070). This deficiency results in a relatively flat forecast of energy and demand savings from demand-side resources for the 2015 – 2029 part of the 20-year planning horizon.

Staff notes that this same issue was identified as MDNR Deficiency 3 in KCPL's Chapter 22 compliance filing in Case No. EE-2008-0034. On page 15 of the Non-Unanimous Stipulation and Agreement in Case No. EE-2008-0034 is the following language:

> **MDNR Deficiency 3:**
>
> In its response to KCP&L's 2008 IRP, MDNR states:
>
> > KCPL does not analyze DSM on an equivalent basis with supply-side resources. 4 CSR 240-22.010 (2)(A) – "Consider and analyze demand side efficiency and energy management measures on an equivalent basis with supply-side alternatives in the resource planning process;"
> >
> > Remedy # 3. In KCPL's next IRP filing, the utility's integrated resource analysis should include alternative resource plans that provide for expansion of DSM resources in incremental steps throughout the 20-year planning horizon. The alternative resource plans should not be limited to one "Aggressive" C&I resource portfolio but should incorporate a series of portfolios with increasing savings and, if necessary, increasing per unit cost. This series should be sufficient to acquire at least an additional 1% of energy requirements per year through demand side programs.
> >
> > In response, ***KCL&L agrees to enter advisory discussions with Parties to facilitate discussion of appropriate end-use measures, potential DSM program portfolios, review DSM experience of other jurisdictions, and review potential DSM program timelines. Parties will act in an advisory role in this advisory process. KCP&L proposes to commence this process in the 3rd quarter of 2009 and, in consultation with the Parties, will establish the discussion topics, timelines for discussion of topics, and response times allotted for parties. If the Parties are unable to resolve any dispute that arises during the advisory process, the matter may be brought to the Commission for decision.***
> > (emphasis added)

Since the same personnel prepare the Chapter 22 compliance filings for KCPL and for GMO, Staff believes that GMO should have made some attempt to correct this deficiency in the GMO compliance filing.

In order to resolve this deficiency, GMO should include expansion of DSM resources in incremental steps throughout the 20-year planning horizon in a number of its alternative resource plans. Resolution of this deficiency should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

4 CSR 240-22.070 Risk Analysis and Strategy Selection

SUMMARY

This rule requires the utility to identify the critical uncertain factors that affect the performance of resource plans, establishes minimum standards for the methods used to assess the risks associated with these uncertainties and requires the utility to specify and officially adopt a resource acquisition strategy.

GMO used decision tree analysis to evaluate the performance of twenty-four alternative resource plans against the following critical uncertain factors:

1. Load growth
2. Construction costs
3. Interest rate levels
4. CO_2 credit prices
5. Natural gas prices
6. Coal prices

The decision tree analysis was accomplished using the Midas^{TM} model to calculate the value of each of the following performance measures:

1. Net present value of revenue requirements (NPVRR)
2. Probable environmental costs
3. Average annual rates
4. Maximum annual rate increase
5. DSM out-of-pocket expenses

GMO requested and received approval for a waiver from requirements of 4 CSR 240-22.070(4).

Following its limited review, Staff is concerned that GMO did not identify the Smart Grid (or similar transmission and distribution advanced technologies) or legal mandates for EERS as uncertain factors to be screened when developing its list of critical uncertain factors. Staff is also concerned that GMO eliminated the 1% DSM alternative resource plan (Plan 16) from consideration as its preferred resource plan without proper consideration of the potential of the Smart Grid and without proper consideration of the probability and impact of EERS legislation, such as Federal H.R.889, in the near future.

These Staff concerns coupled with Staff's belief that GMO has failed to satisfy the requirements of 4 CSR 240.010(2)(A) by not considering and analyzing demand-side resources on an equivalent basis with supply-side resources in integrated resource analysis (see Staff Deficiency 4) results in GMO failure to meet the requirements of 4 CSR 240-22.070(6)(A) in that the preferred resource plan does not "strike an appropriate balance between the various planning objectives specified in 4 CSR 240-22.010(2)" - more specifically 4 CSR 240-22.010(2)(A).

Staff's concerns and deficiency identified for this rule could have a significant impact on the 20-year preferred resource plan and GMO's resource acquisition strategy. More specifically, if GMO had included Smart Grid and EERS legislation in its list of uncertain factors, and if GMO had included implementation of new demand-side resources at appropriate times throughout the 20-year planning horizon (most notably in the 2015 – 2029 time frame) in some of its alternative resource plans, it is Staff's belief that Smart Grid and EERS would likely have been identified as critical uncertain factors in the risk analysis and selection process. If this turns out to be the case, Staff believes that the preferred resource plan resulting from risk analysis and strategy selection could have materially more demand-side resources and materially fewer supply-side resources.

DEFICIENCIES

6. **GMO has failed to meet the requirements of 4 CSR 240-22.070(6)(A) in that the preferred resource plan does not "strike an appropriate balance between the various planning objectives specified in 4 CSR 240-22.010(2), more specifically 4 CSR 240-22.010(2)(A).**

Staff concerns with this rule coupled with GMO's failure to satisfy the requirements of 4 CSR 240.010(2)(A) by not considering and analyzing demand-side resources on an equivalent basis with supply-side resources in integrated resource analysis (see Staff Deficiency 4) results in Staff's belief that GMO has failed to meet the requirements of 4 CSR 240-22.070(6)(A) in that the preferred resource plan does not "strike an appropriate balance between the various planning objectives specified in 4 CSR 240-22.010(2)," - specifically 4 CSR 240-22.010(2)(A).

To resolve this deficiency, GMO should include expansion of DSM resources in incremental steps throughout the 20-year planning horizon in a number of its alternative resource plans during risk analysis and strategy selection. Resolution of this deficiency

should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

CONCERNS

G. GMO did not treat the list of uncertain factors contained in 4 CSR 240-22.070(2) as a "minimum requirement" and did not add any additional uncertain factors that are "special contemporary issues," issues including Smart Grid and EERS – 4 CSR 240-22.070(2)

Staff is concerned that GMO did not identify the Smart Grid (or similar transmission and distribution advanced technologies) and legal mandates for energy efficiency resource standards (EERS) as uncertain factors to be screened when developing its list of critical uncertain factors. GMO is aware of at least these two "special contemporary issues" which should have been added to GMO's list of uncertain factors.

GMO is clearly aware of the Smart Grid and its potential to transform the electric utility industry as evidenced by: 1) Appendix 3 (Smart Grid Demonstration) of GMO's supplemental filing in this case on November 2, 2009 in this case, and 2) the following from page 35 of GMO's supplemental filing.

> Also noted on the teleconference meeting on October 15th, 2009 the August 5th filing did not include any reference to Smart Grid technology. Prior to the August 5th filing of the GMO IRP, an internal discussion was held to decide whether to include information regarding Smart Grid initiatives. The concern was that current Smart Grid initiatives are within the KCP&L service territory, not the GMO service territory. After the October 15th teleconference with Parties, the following information is being submitted - noting that the information is based upon current KCP&L initiatives but could extend to GMO in the future:
>
> KCP&L is proposing a five year Smart Grid Demonstration Project that truly creates an end-to-end Smart Grid – from SmartGeneration to SmartEnd-Use – built around a major SmartSubstation. It introduces new technologies, business models, applications, and protocols that will be tested and refined in this "laboratory". The project will include detailed analysis and testing to demonstrate the benefits of optimizing energy and information flows and utility operations across supply and demand resources, T&D operations, and customer end-use programs. Done successfully, the demonstration project will quantify smart grid costs, benefits and cost-effectiveness, verify Smart Grid technology viability, and validate new Smart Grid business models, at a scale that can be readily adapted and replicated to both the KCP&L and GMO service areas.

Staff agrees with GMO that there is uncertainty about the potential of the Smart Grid and that the KCLL Smart Grid demonstration project (Green Impact Zone) is appropriate to help quantify the benefits, cost and timing of Smart Grid. GMO's decision to not include Smart Grid as an uncertain factor in this case is completely inconsistent with its belief that there is great potential in the Smart Grid as described in Appendix 3 of its supplemental filing in this case.

The second special contemporary issue that GMO should have also been aware of is the potential for Federal and/or State legislation which will mandate higher levels of energy efficiency.

Currently, 19 states have a statewide EERS including California, Colorado, Connecticut, Hawaii, **Illinois, Iowa,** Maryland, Michigan, Minnesota, Nevada, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Texas, Vermont, Virginia and Washington. While it is true that the energy saving goals in H.R. 889 are for potential energy savings from not only utility DSM programs, but also for more aggressive building codes and appliance efficiency standards as well as CHP, it is expected that a very large portion of the energy savings will come from utility DSM programs if the country and states are to meet the goals.

To resolve this concern, GMO should treat the list of uncertain factors in 4 CSR 240-22.070(2) as a minimum requirement and should add to this list any "special contemporary issues" prior to evaluating which uncertain factors are critical uncertain factors in all future compliance filings. Also, GMO should determine whether the Smart Grid and/or legal mandates such as an EERS are critical uncertain factors and report finding to the GMO stakeholder group . Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

H. Eliminated Plan 16 from consideration as its preferred resource plan simply because KCPL GMO considered Plan 16 to be an unachievable resource plan – 4 CSR 240-22.070(6)

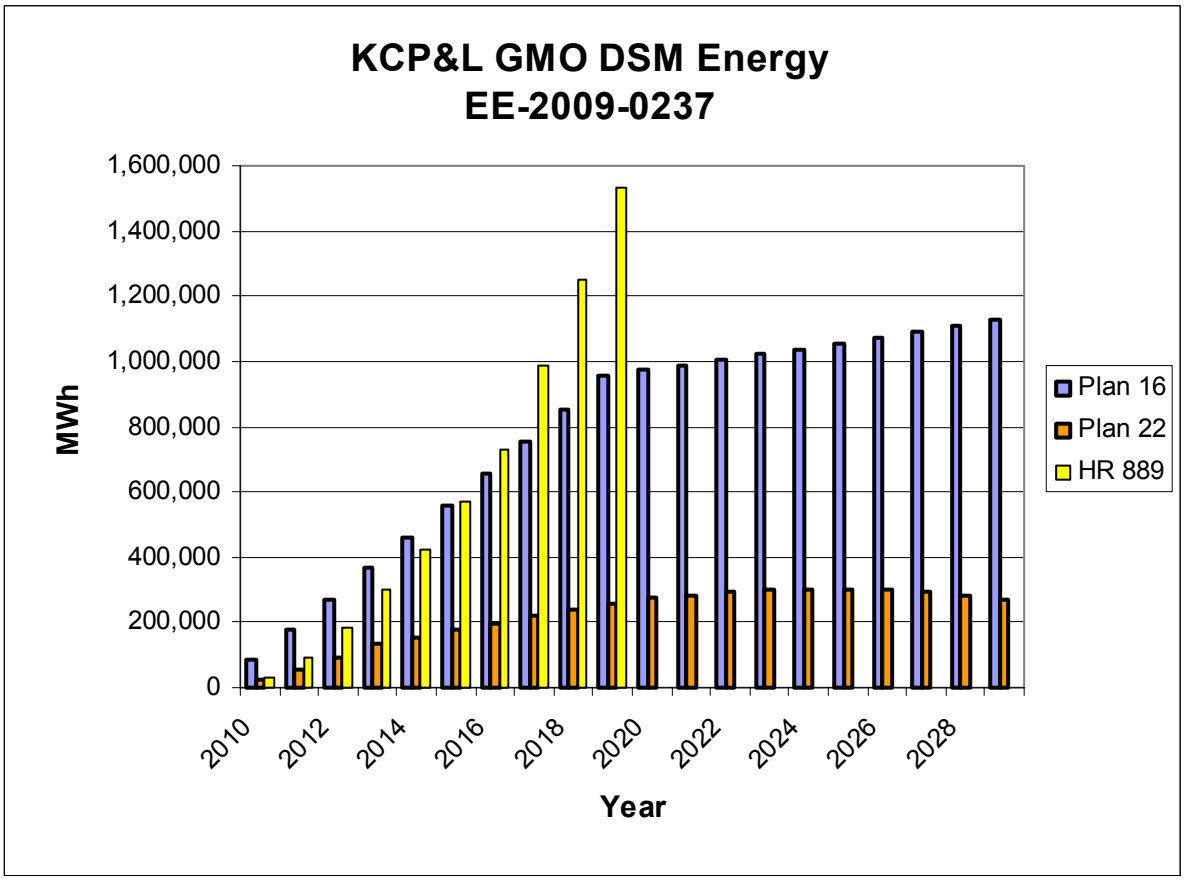
There is very little discussion by GMO of the rationale for not giving Plan 16 (or other versions of Plan 16) more consideration as its preferred resource plan in this integrated resource plan compliance filing. The following is from GMO's Executive Summary in Volume 1 the GMO integrated resource plan filing in this case:

> The Preferred Resource Plan was not the lowest cost plan from a Net Present Value of Revenue Requirements (NPVRR) perspective. Plan 16 resulted in the

> lowest expected value of NPVRR of all modeled plans. This plan included a hypothetical 1% incremental annual DSM impact based on achieving DSM energy reductions of 1% of annual retail energy every year of the planning horizon. Plan 16 was modeled to provide an indication of the NPVRR impacts of obtaining increased DSM penetrations over and above the maximum currently identified by the company.
>
> While Plan 16 was based on assumptions regarding the cost of achieving this level of DSM penetration, it does provide insight on the company's plan to achieve ever higher amounts of DSM energy and peak reductions. The results show that the company and the ratepayer stand to benefit from the company's continuing efforts to achieve more DSM programs and improved DSM penetration. GMO will continue to take advantage of developing technologies and will expand DSM offerings if cost effective. (emphasis added)
>
> The plan producing the next lowest expected value of NPVRR was therefore chosen as the Preferred Resource Plan.

Staff notes that the following description of Plan 16 is inconsistent with other information in this filing concerning Plan 16: "This plan included a hypothetical 1% incremental annual DSM impact based on achieving DSM energy reductions of 1% of annual retail energy every year of the planning horizon." Staff believes that Plan 16 is more correctly described as including a hypothetical 1% incremental annual DSM impact based on achieving DSM energy reductions of 1% of annual retail energy for each of the first ten years of the planning horizon and then holding the DSM energy reduction at 10% of forecasted annual retail energy for years 11-20 of the planning horizon

With passage of H.R. 889 or similar legislation a distinct possibility in the near future, Plan 16 is not an unachievable alternative resource plan. Rather, Plan 16 (or some variation of Plan 16) may well be a very "realist" approach to meeting the goals of an aggressive EERS as illustrated by the following graphic prepared by Staff:



To resolve this concern, GMO should include alternative resource plans which include more aggressive demand-side resources throughout the 20-year planning horizon as a part of its updated resource acquisition strategy. Resolution of this concern should be achieved through the GMO stakeholder group process described in the **Results of Staff's Review** section of this report.

4 CSR 240-22.080 Filing Schedule and Requirements

SUMMARY

Chapter 4 CSR 240-22 Electric Utility Resource Planning sets minimum standards to govern the scope and objectives of the integrated resource planning process of the electric utilities regulated by the Commission. The focus of the rule is on the planning process used to determine the utility's preferred resource plan, not the outcome of that process, i.e., the preferred resource plan itself. 4 CSR 240-22.080 identifies minimum reporting requirements concerning who is to file, when to file, what to file, the review process and the Commissions authority with respect to compliance filings. Included in that section, at 4 CSR 240-22.080(2), is the following:

> (2) The electric utility's compliance filing may also include a request for nontraditional accounting procedures and information regarding any associated ratemaking treatment to be sought by the utility for demand side resource costs. If the utility desires to make any such request, it must be made in the utility's compliance filing pursuant to this rule and not at some subsequent time. If the utility desires to continue any previously authorized nontraditional accounting procedures beyond the three (3)-year implementation period, it must request reauthorization in each subsequent filing pursuant to this rule. Any request for initial authorization or reauthorization of these nontraditional accounting procedures must—
>
> (A) Be limited to specific demand-side programs that are included in the utility's implementation plan; and
>
> (B) Include specific proposals that contain at least the following information:
>
> 1. An explanation of the specific form and mechanics of implementing the proposed accounting procedure and any associated ratemaking treatment to be sought;
>
> 2. A discussion of the rationale and justification of the need for a nontraditional treatment of these costs;
>
> 3. An explanation of how the specific proposal meets this need for nontraditional treatment; and
>
> 4. A quantitative comparison of the utility's estimated earnings over the three (3)-year implementation period with and without the proposed nontraditional accounting procedures and any associated ratemaking treatment to be sought.

Currently GMO accumulates its demand-side costs in a regulatory asset account. The costs in that account accrue interest at the allowance for funds used during construction rate

until the following rate case. In that rate case the total of the prudent costs accrued in the account begin receiving a rate of return and are amortized over ten years for purposes of determining GMO's cost of service for setting rates. GMO did not receive this treatment as a result of a request in its last resource plan compliance filing. Instead, the Staff proposed it, the parties agreed to it and the Commission approved this ratemaking treatment for GMO in GMO's 2006 general electric rate increase case, Case No. ER-2007-0004.

As a part of this integrated resource plan GMO is seeking a different mechanism for cost recovery of demand-side resource costs. GMO proposes the following components in its non-traditional rate making request:

1. Return of and on DSM investments;
2. Recovery of lost margins; and
3. Performance mechanism for meeting or exceeding DSM program energy savings goals.

GMO has used the Midas™ model to predict the impact of non-traditional rate making on GMO's earnings as a result of DSM implementation plans in the preferred resource plan to be: $0.58 million in 2010, $0.90 million in 2011 and $1.06 million in 2012.

With the passage of the "Missouri Energy Efficiency Investment Act" (also known as Senate Bill 376) by the 2009 Missouri Legislature, and subsequent signing by the Governor to become law on August 28, 2009, the State of Missouri has declared and directed as follows:

> 3. It shall be the policy of the state to value demand-side investments equal to traditional investments in supply and delivery infrastructure and allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs. In support of this policy, the commission shall:
>
> (1) Provide timely cost recovery for utilities;
>
> (2) Ensure that utility financial incentives are aligned with helping customers use energy more efficiently and in a manner that sustains or enhances utility customers' incentives to use energy more efficiently; and
>
> (3) Provide timely earnings opportunities associated with cost-effective measurable and verifiable efficiency savings.
>
> 4. The commission shall permit electric corporations to implement commission-approved demand-side programs proposed pursuant to this section with a goal of achieving all cost-effective demand-side savings. Recovery for such programs shall not be permitted unless the programs are approved by the commission, result in energy or demand savings and are beneficial to all customers in the customer class in which the programs are proposed, regardless of whether the programs are utilized by

> all customers. The commission shall consider the total resource cost test a preferred cost-effectiveness test. Programs targeted to low-income customers or general education campaigns do not need to meet a cost-effectiveness test, so long as the commission determines that the program or campaign is in the public interest. Nothing herein shall preclude the approval of demand-side programs that do not meet the test if the costs of the program above the level determined to be cost-effective are funded by the customers participating in the program or through tax or other governmental credits or incentives specifically designed for that purpose.

Subsections 393.1075.3 and .4, RSMo. Supp. 2009.

While the Staff does not view GMO's existing programs presently to be "demand-side programs proposed pursuant to this section [section 393.1075 RSMo. Supp. 2009]," the state policy of "valu[ing] demand-side investments equal to traditional investments in supply and delivery infrastructure and allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs" should now guide the treatment of GMO's existing programs. As the Staff interprets the foregoing statutory language, on the advice of counsel, "valu[ing] demand-side investments equal to traditional investments in supply and delivery infrastructure" is directed towards determining which resource to use. In contrast, cost recovery for demand-side programs is governed by the language, "allow recovery of all reasonable and prudent costs of delivering cost-effective demand-side programs."

Components of GMO's non-traditional rate making request for DSM programs are cost recovery mechanisms listed in the Missouri Energy Efficiency Investment Act. The language of that Act where those mechanisms are listed follows:

> 5. To comply with this section the commission may develop cost recovery mechanisms to further encourage investments in demand-side programs including, in combination and without limitation: capitalization of investments in and expenditures for demand-side programs, rate design modifications, accelerated depreciation on demand-side investments, and allowing the utility to retain a portion of the net benefits of a demand-side program for its shareholders.

Section 393.1075.5, RSMo. Supp. 2009.

While GMO's proposal is a starting point for discussion, many details of that proposal need to be clarified or determined. For example, it is not clear to Staff from GMO's proposal when GMO would start recovering the cost of its demand-side programs. By statute the Legislature has stated that the Commission shall "[p]rovide timely earnings opportunities associated with cost-effective measurable and verifiable efficiency savings." The resource

planning process models demand-side programs that, with inputs selected by the planners, model to be cost-effective. The determination of whether or not a program is cost-effective and efficiency savings have been achieved cannot be made until after the program has both been implemented and evaluated post implementation. This analysis of DSM programs is analogous to how the addition of combustion turbines is analyzed. GMO is not allowed immediate cost recovery when it starts building a combustion turbine, even if doing so is shown to be the most cost-effective resource to meet GMO's needs. GMO must both build the combustion turbine and show that it works before GMO can recover the cost of the combustion turbine from its ratepayers. In the same way, the Missouri Energy Efficiency Investment Act requires that a DSM program be shown to be cost-effective and achieve verifiable efficiency savings before the cost of the program may be recovered from ratepayers.

While Staff cannot determine GMO's demand-side resource cost recovery proposal is deficient in meeting the requirements of 4 CSR 240-22.080, at this time Staff cannot support GMO's proposal. Staff has begun discussions with stakeholders regarding the intent of the Missouri Energy Efficiency Investment Act and Staff plans to develop policies and rules to implement the Missouri Energy Efficiency Investment Act as soon as it gets revisions of the Chapter 22 rules to the Commission. Staff proposes that GMO continue the current regulatory asset treatment of demand-side costs until the Commission has established policies and rules to implement the Missouri Energy Efficiency Investment Act.

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the 2009 Resource Plan of KCP&L Greater Missouri Operations Company Pursuant to 4 CSR 240-22	)))	Case No. EE-2009-0237

AFFIDAVIT OF LENA M. MANTLE

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Lena M. Mantle, of lawful age, on oath states: that she has participated in the preparation of the foregoing Staff Report in pages 34 to 37 ; that she has knowledge of the matters set forth in such Report; and that such matters are true to the best of her knowledge and belief.

Lena M. Mantle
Lena M. Mantle

Subscribed and sworn to before me this 10th day of December, 2009.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #06942086

Susan L. Sundermeyer
Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the 2009 Resource Plan of KCP&L Greater Missouri Operations Company Pursuant to 4 CSR 240-22	)))	Case No. EE-2009-0237

AFFIDAVIT OF MATTHEW J. BARNES

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Matthew J. Barnes, of lawful age, on oath states: that he has participated in the preparation of the foregoing Staff Report in pages 26 to 33; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

Matthew J. Barnes

Subscribed and sworn to before me this 10th day of December, 2009.

Notary Public

SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #06942086

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the 2009 Resource Plan of KCP&L Greater Missouri Operations Company Pursuant to 4 CSR 240-22	)))	Case No. EE-2009-0237

AFFIDAVIT OF ADAM MCKINNIE

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Adam McKinnie, of lawful age, on oath states: that he has participated in the preparation of the foregoing Staff Report in pages 18 to 25; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

Adam McKinnie

Subscribed and sworn to before me this 10th day of December, 2009.

Notary Public

SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #06942086

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the 2009 Resource Plan of KCP&L Greater Missouri Operations Company Pursuant to 4 CSR 240-22	)))	Case No. EE-2009-0237

AFFIDAVIT OF LEON C. BENDER

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

Leon C. Bender, of lawful age, on oath states: that he has participated in the preparation of the foregoing Staff Report in pages 6 thru 17 ; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

Leon C. Bender

Leon C. Bender

Subscribed and sworn to before me this 10th day of December, 2009.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #06942086

Susan L. Sundermeyer

Notary Public

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the 2009 Resource Plan of KCP&L Greater Missouri Operations Company Pursuant to 4 CSR 240-22	)))	Case No. EE-2009-0237

AFFIDAVIT OF JOHN A. ROGERS

STATE OF MISSOURI)
) **ss**
COUNTY OF COLE)

John A. Rogers, of lawful age, on oath states: that he has participated in the preparation of the foregoing Staff Report in pages 1 to 33; that he has knowledge of the matters set forth in such Report; and that such matters are true to the best of his knowledge and belief.

John A Rogers
John A. Rogers

Subscribed and sworn to before me this 10th day of December, 2009.

NOTARY PUBLIC NOTARY SEAL STATE OF MISSOURI

SUSAN L. SUNDERMEYER
My Commission Expires
September 21, 2010
Callaway County
Commission #06942088

Susan L Sundermeyer
Notary Public

I

111TH CONGRESS
1ST SESSION

H. R. 889

To amend title VI of the Public Utility Regulatory Policies Act of 1978 to establish a Federal energy efficiency resource standard for retail electricity and natural gas distributors, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 4, 2009

Mr. MARKEY of Massachusetts introduced the following bill; which was referred to the Committee on Energy and Commerce

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A BILL

To amend title VI of the Public Utility Regulatory Policies Act of 1978 to establish a Federal energy efficiency resource standard for retail electricity and natural gas distributors, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Save American Energy Act''.

Addendum A

SEC. 2. ENERGY EFFICIENCY RESOURCE STANDARD FOR RETAIL ELECTRICITY AND NATURAL GAS DISTRIBUTORS.

(a) IN GENERAL.—Title VI of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2601 and following) is amended by adding at the end the following:

"SEC. 610. FEDERAL ENERGY EFFICIENCY RESOURCE STANDARD FOR RETAIL ELECTRICITY AND NATURAL GAS DISTRIBUTORS.

"(a) STATEMENT OF FEDERAL POLICY.—The Federal energy efficiency resource standard established by this section sets nationwide minimum levels of electricity and natural gas savings to be achieved through utility efficiency programs, building energy codes, appliance standards, and related efficiency measures. In light of the cost-effective energy efficiency opportunities that exist across the country in every sector of the economy, retail electricity distributors, retail natural gas distributors, and States should additionally consider energy efficiency as a resource in utility planning and procurement activities and should seek to achieve all energy efficiency that is available at lower cost than energy supply options.

"(b) DEFINITIONS.—In this section:

"(1) AFFILIATE.—The term 'affiliate' when used in relation to a person, means another person which owns or controls, is owned or controlled by, or

is under common ownership control with, such person, as determined under regulations promulgated by the Secretary.

''(2) ASHRAE, ANSI, AND IESNA.—The terms 'ASHRAE', 'ANSI', and 'IESNA' mean the American Society of Heating, Refrigerating and Air Conditioning Engineers, the American National Standards Institute, and the Illuminating Engineering Society of North America, respectively.

''(3) BASE QUANTITY.—The term 'base quantity', with respect to a retail electricity distributor or retail natural gas distributor, means, for each year for which a performance standard is established under subsection (d), the average annual quantity of electricity or natural gas delivered by the retail electricity distributor or retail natural gas distributor to retail customers during the 2 calendar years immediately preceding such year. In determining the base quantity of a retail natural gas distributor, natural gas delivered for purposes of electricity generation shall be excluded.

''(4) CHP SAVINGS.—The term 'CHP savings' means—

''(A) CHP system savings from a combined heat and power system that commences oper-

ation after the date of enactment of this section; and

"(B) the increase in CHP system savings from upgrading or replacing, after the date of enactment of this section, a combined heat and power system that commenced operation on or before the date of enactment of this section.

"(5) CHP SYSTEM SAVINGS.—The term 'CHP system savings' means the electric output, and the electricity saved due to the mechanical output, of a combined heat and power system, adjusted to reflect any increase in fuel consumption by that system as compared to the fuel that would have been required to produce an equivalent useful thermal energy output in a separate thermal-only system, as determined in accordance with regulations promulgated by the Secretary.

"(6) CODES AND STANDARDS SAVINGS.—

"(A) IN GENERAL.—The term 'codes and standards savings' means a reduction in end-use electricity or natural gas consumption in a retail electricity distributor or a retail natural gas distributor's service territory as a result of the adoption and implementation, after the date of enactment of this section, of new or revised

appliance and equipment efficiency standards or building energy codes.

''(B) BASELINES.—In calculating codes and standards savings—

''(i) the baseline for calculating savings from building codes shall be the 2006 International Energy Conservation Code for residential buildings and the ASHRAE/ANSI/IESNA Standard 90.1–2004 for commercial buildings, or the relevant State building code in effect on date of enactment of this section, whichever is more stringent; and

''(ii) the baseline for calculating savings from appliance standards shall be the average efficiency of new appliances in the relevant category or categories prior to adoption and implementation of the new standard.

''(7) COMBINED HEAT AND POWER SYSTEM.—The term 'combined heat and power system' means a system that uses the same energy source both for the generation of electrical or mechanical power and the production of steam or another form of useful thermal energy, provided that—

''(A) the system meets such requirements relating to efficiency and other operating characteristics as the Secretary may promulgate by regulation; and

''(B) the net wholesale sales of electricity by the facility will not exceed 50 percent of total annual electric generation by the facility.

''(8) COST-EFFECTIVE.—The term 'cost-effective', with respect to an energy efficiency measure, means that the measure achieves a net present value of economic benefits over the life of the measure, both directly to the energy consumer and to the economy, that is greater than the net present value of the cost of the measure over the life of the measure, both directly to the energy consumer and to the economy.

''(9) CUSTOMER FACILITY SAVINGS.—The term 'customer facility savings' means a reduction in end-use electricity or natural gas consumption (including recycled energy savings) at a facility of an end-use consumer of electricity or natural gas served by a retail electricity distributor or natural gas distributor, as compared to—

''(A) in the case of a new facility, consumption at a reference facility of average efficiency;

''(B) in the case of an existing facility, consumption at such facility during a base period (which shall not be less than 1 year); or

''(C) in the case of new equipment, regardless of whether the new equipment replaces existing equipment at the end of the useful life of the existing equipment, consumption by new equipment of average efficiency of the same equipment type, provided that customer savings under this subparagraph shall not be counted towards customer savings under subparagraph (A) or (B).

''(10) ELECTRICITY SAVINGS.—The term 'electricity savings' means reductions in electricity consumption achieved through measures implemented after the date of enactment of this section, as determined in accordance with regulations promulgated by the Secretary, limited to—

''(A) customer facility savings of electricity, adjusted to reflect any associated increase in fuel consumption at the facility;

''(B) reductions in distribution system losses of electricity achieved by a retail electricity distributor, as compared to losses attributable to new or replacement distribution system equipment of average efficiency (as defined in regulations to be promulgated by the Secretary);

''(C) CHP savings; and

''(D) codes and standards savings of electricity.

''(11) NATURAL GAS SAVINGS.—The term 'natural gas savings' means reductions in natural gas consumption from measures implemented after the date of enactment of this section, as determined in accordance with regulations promulgated by the Secretary, limited to—

''(A) customer facility savings of natural gas, adjusted to reflect any associated increase in electricity consumption or consumption of other fuels at the facility;

''(B) reductions in leakage, operational losses, and consumption of natural gas fuel to operate a gas distribution system, achieved by a retail natural gas distributor, as compared to similar leakage, losses, and consumption during

a base period (which shall not be less than 1 year); and

"(C) codes and standards savings of natural gas.

"(12) POWER POOL.—The term 'power pool' means an association of 2 or more interconnected electric systems that is recognized by the Commission as having an agreement to coordinate operations and planning for improved reliability and efficiencies, including a Regional Transmission Organization or an Independent System Operator.

"(13) RECYCLED ENERGY SAVINGS.—The term 'recycled energy savings' means a reduction in electricity or natural gas consumption that results from a modification of an industrial or commercial system that commenced operation before the date of enactment of this section, in order to recapture electrical, mechanical, or thermal energy that would otherwise be wasted, as determined in accordance with regulations promulgated by the Secretary.

"(14) REPORTING PERIOD.—The term 'reporting period' means—

"(A) calendar year 2012; and

"(B) each successive 2-calendar-year period thereafter.

''(15) RETAIL ELECTRICITY DISTRIBUTOR.—

''(A) IN GENERAL.—The term 'retail electricity distributor' means, for any given calendar year, an electric utility that owns or operates an electric distribution facility and, using the facility, delivered not less than 1,500,000 megawatt-hours of electric energy to electric consumers for purposes other than resale during the most recent 2-calendar-year period for which data are available.

''(B) INCLUSIONS AND LIMITATIONS.—For purposes of determining whether an electric utility qualifies as a retail electricity distributor under subparagraph (A)—

''(i) deliveries by any affiliate of an electric utility to electric consumers for purposes other than resale shall be considered to be deliveries by such electric utility; and

''(ii) deliveries by any electric utility to a lessee, tenant, or affiliate of such electric utility shall not be treated as deliveries to electric consumers.

''(16) RETAIL NATURAL GAS DISTRIBUTOR.—

"(A) IN GENERAL.—The term 'retail natural gas distributor' means, for any given calendar year, a local distribution company, as that term is defined in section 2(17) of the Natural Gas Policy Act of 1978 (15 U.S.C. 3301(17)), that delivered to natural gas consumers more than 5,000,000,000 cubic feet of natural gas during the most recent 2-calendar-year period for which data are available.

"(B) INCLUSIONS AND LIMITATIONS.—For purposes of determining whether a person qualifies as a retail natural gas distributor under subparagraph (A)—

"(i) deliveries of natural gas by any affiliate of a local distribution company to consumers for purposes other than resale shall be considered to be deliveries by such local distribution company; and

"(ii) deliveries of natural gas to a lessee, tenant, or affiliate of a local distribution company shall not be treated as deliveries to natural gas consumers.

"(17) THIRD-PARTY EFFICIENCY PROVIDER.—The term 'third-party efficiency provider' means any retailer, building owner, energy service company, fi-

nancial institution or other commercial, industrial or non-profit entity that is capable of providing electricity savings or natural gas savings in accordance with the requirements of subsections (e) and (f).

''(e) ESTABLISHMENT OF PROGRAM.—

''(1) REGULATIONS.—Not later than 1 year after the date of enactment of this section, the Secretary shall, by regulation, establish a program to implement and enforce the requirements of this section, including—

''(A) measurement and verification procedures and standards under subsection (f);

''(B) requirements by which retail electricity distributors and retail natural gas distributors shall demonstrate, document, and report their compliance with the performance standards specified in subsection (d) and estimate the impact of the standards on current and future electricity and natural gas use in such distributors' service territories; and

''(C) requirements governing applications for, and implementation of, delegated State administration under subsection (h).

''(2) COORDINATION WITH STATE PROGRAMS.—In establishing and implementing this program, the

Secretary shall, to the extent practicable, preserve the integrity, and incorporate best practices, of existing State energy efficiency programs.

"(d) PERFORMANCE STANDARDS.—

"(1) COMPLIANCE OBLIGATION.—Not later than April 1 of the calendar year immediately following each reporting period—

"(A) each retail electricity distributor shall submit to the Secretary a report, in accordance with regulations issued by the Secretary, demonstrating that it has achieved cumulative electricity savings (adjusted to account for any attrition of savings measures implemented in prior years) in each calendar year that are equal to the applicable percentage, established under paragraph (2), (3), or (4) of this subsection, of the base quantity of such retail electricity distributor; and

"(B) each retail natural gas distributor shall submit to the Secretary a report, in accordance with regulations issued by the Secretary, demonstrating that it has achieved cumulative natural gas savings (adjusted to account for any attrition of savings measures implemented in prior years) in each calendar year

that are equal to the applicable percentage, established under paragraph (2), (3), or (4) of this subsection, of the base quantity of such retail natural gas distributor.

''(2) STANDARDS FOR 2012 THROUGH 2020.—For calendar years 2012 through 2020, the applicable percentages are as follows:

''Calendar Year	Cumulative Electricity Savings Percentage	Cumulative Natural Gas Savings Percentage
2012	1.00	0.75
2013	2.00	1.50
2014	3.25	2.50
2015	4.50	3.50
2016	6.00	4.75
2017	7.50	6.00
2018	10.00	7.25
2019	12.50	8.50
2020	15.00	10.00

''(3) SUBSEQUENT YEARS.—

''(A) CALENDAR YEARS 2021 THROUGH 2030.—Not later than December 31, 2018, the Secretary shall promulgate regulations establishing performance standards (expressed as applicable percentages of base quantity for both cumulative electricity savings and cumulative natural gas savings) for calendar years 2021 through 2030.

"(B) SUBSEQUENT EXTENSIONS.—Except as provided in subparagraph (A), not later than December 31 of the penultimate reporting period for which performance standards have been set under this paragraph, the Secretary shall promulgate regulations establishing performance standards (expressed as applicable percentages of base quantity for both cumulative electricity savings and cumulative natural gas savings) for the 10-calendar-year period following the last calendar year for which performance standards previously were set.

"(C) REQUIREMENTS.—The Secretary shall set standards under this paragraph at levels reflecting the maximum achievable level of cost-effective energy efficiency potential, taking into account cost-effective energy savings achieved by leading retail electricity distributors and retail natural gas distributors, opportunities for new codes and standard savings, technology improvements, and other indicators of cost-effective energy efficiency potential. In no case shall the applicable percentages for any calendar year be lower than those for calendar year 2020 (including any increase in the stand-

ard for calendar year 2020 pursuant to paragraph (4)).

''(4) MIDCOURSE REVIEW AND ADJUSTMENT OF STANDARDS.—Not later than December 31, 2014, and at 10-year intervals thereafter, the Secretary shall review the most recent standards established under paragraph (2) or (3) and shall, by regulation, increase the standards if the Secretary determines that additional cost-effective energy efficiency potential is achievable, taking into account the factors identified in paragraph (3)(C). If the Secretary revises standards pursuant to this paragraph, the regulations shall provide adequate lead time to ensure that compliance with the increased standards is feasible.

''(5) DELAY OF SUBMISSION FOR FIRST REPORTING PERIOD.—Notwithstanding paragraphs (1) and (2), for the 2012 reporting period, the Secretary may accept a request from a retail electricity distributor or a retail natural gas distributor to delay the required submission of documentation of some or all of the required savings for up to 2 years. The request for delay shall include a plan for coming into full compliance by the end of the 2013–2014 reporting period.

''(e) TRANSFERS OF ELECTRICITY OR NATURAL GAS SAVINGS.—

''(1) BILATERAL CONTRACTS FOR SAVINGS TRANSFERS.—Subject to the limitations of this paragraph, a retail electricity distributor or retail natural gas distributor may use electricity savings or natural gas savings purchased, pursuant to a bilateral contract, from another retail electricity distributor or retail natural gas distributor, a State, or a third-party efficiency provider to meet the applicable performance standard under subsection (d).

''(2) REQUIREMENTS.—Electricity or natural gas savings purchased and used for compliance pursuant to this paragraph shall be—

''(A) measured and verified in accordance with the procedures specified under subsection (f);

''(B) reported in accordance with subsection (d); and

''(C) achieved within the same State as is served by the retail electricity distributor or retail natural gas distributor.

''(3) EXCEPTION.—Notwithstanding paragraph (2)(C), a State regulatory authority may authorize a retail electricity distributor or a retail natural gas

distributor regulated by such State regulatory authority to purchase savings achieved in a different State, provided that—

"(A) such savings are achieved within the same power pool; and

"(B) the State regulatory authority that regulates the purchaser oversees the measurement and verification of the savings pursuant to the procedures and standards applicable in the purchaser's State.

"(4) REGULATORY APPROVAL.—Nothing in this paragraph shall limit or affect the authority of a State regulatory authority to require a retail electricity distributor or retail natural gas distributor that is regulated by such State regulatory authority to obtain such State regulatory authority's authorization or approval of a contract for transfer of savings under this paragraph.

"(5) LIMITATIONS.—In the interest of optimizing achievement of cost-effective efficiency potential, the Secretary may prescribe such limitations as the Secretary determines appropriate with respect to the proportion of a retail electricity or natural gas distributor's compliance obligation, under the applicable performance standards under subsection (d),

that may be met using electricity or natural gas savings that are purchased under this paragraph.

''(f) MEASUREMENT AND VERIFICATION OF SAVINGS.—The regulations promulgated pursuant to subsection (b) shall include—

''(1) procedures and standards for defining and measuring electricity savings and natural gas savings that can be counted towards the performance standards set forth in subsection (d), which shall—

''(A) specify the types of energy efficiency and energy conservation measures that can be counted;

''(B) require that energy consumption estimates for customer facilities or portions of facilities in the applicable base and current years be adjusted, as appropriate, to account for changes in weather, level of production, and building area;

''(C) account for the useful life of measures;

''(D) include deemed savings values for specific, commonly-used measures;

''(E) allow for savings from a program to be estimated based on extrapolation from a representative sample of participating customers;

''(F) include procedures for counting CHP savings and recycled energy savings;

''(G) establish methods for calculating codes and standards energy savings, including the use of verified compliance rates;

''(H) count only measures and savings that are additional to business-as-usual practices;

''(I) except in the case of codes and standards savings, ensure that the retail electricity distributor or retail natural gas distributor claiming the savings played a significant role in achieving the savings (including through the activities of a designated agent of the distributor or through the purchase of transferred savings);

''(J) avoid double-counting of savings used for compliance with this section, including transferred savings; and

''(K) include savings from programs administered by the retail electric or natural gas distributor that are funded by State, Federal, or other sources; and

''(2) procedures and standards for third-party verification of reported electricity savings or natural gas savings.

''(g) ENFORCEMENT AND JUDICIAL REVIEW.—

''(1) REVIEW OF RETAIL DISTRIBUTOR REPORTS.—The Secretary shall review each report submitted to the Secretary by a retail electricity distributor or retail natural gas distributor under subsection (d) to verify that the applicable performance standards under subsection (d) have been met. In determining compliance with the applicable performance standards, the Secretary shall exclude reported electricity savings or natural gas savings that are not adequately demonstrated and documented, in accordance with the regulations issued under subsections (d), (e), and (f).

''(2) PENALTY FOR FAILURE TO DOCUMENT ADEQUATE SAVINGS.—If a retail electricity distributor or a retail natural gas distributor fails to demonstrate compliance with an applicable performance standard under subsection (d), or to pay to the State an applicable alternative compliance payment under subsection (h)(4), the Secretary shall assess against the retail electricity distributor or retail natural gas distributor a civil penalty for each such failure in an amount equal to, as adjusted for inflation in accordance with such regulations as the Secretary may promulgate—

"(A) $100 per megawatt-hour of electricity savings or alternative compliance payment that the retail electricity distributor failed to achieve or make, respectively; or

"(B) $10 per million Btu of natural gas savings or alternative compliance payment that the retail natural gas distributor failed to achieve or make, respectively.

"(3) OFFSETTING STATE PENALTIES.—The Secretary shall reduce the amount of any penalty under paragraph (2) by the amount paid by the relevant retail electricity distributor or retail natural gas distributor to a State for failure to comply with the requirements of a State energy efficiency resource standard during the same compliance period, provided that the State standard is comparable in type to the Federal standard established under this section and is more stringent than the applicable performance standards under subsection (d).

"(4) ENFORCEMENT PROCEDURES.—The Secretary shall assess a civil penalty, as provided under paragraph (1), in accordance with the procedures described in section 333(d) of the Energy Policy and Conservation Act of 1954 (42 U.S.C. 6303).

''(5) JUDICIAL REVIEW.—Any person who will be adversely affected by a final action taken by the Secretary under this section, other than the assessment of a civil penalty, may use the procedures for review described in section 336(b) of the Energy Policy and Conservation Act (42 U.S.C. 6306). For purposes of this paragraph, references to a rule in section 336(b) of the Energy Policy and Conservation Act shall be deemed to refer also to all other final actions of the Secretary under this section other than the assessment of a civil penalty.

''(h) STATE ADMINISTRATION.—

''(1) IN GENERAL.—Upon receipt of an application from the Governor of a State (including, for purposes of this subsection, the Mayor of the District of Columbia), the Secretary may delegate to the State the administration of this section within the State's territory if the Secretary determines that the State will implement an energy efficiency program that meets or exceeds the requirements of this section, including—

''(A) achieving electricity savings and natural gas savings at least as great as those required under the applicable performance standards established under subsection (d);

''(B) reviewing reports and verifying electricity savings and natural gas savings achieved in the State (including savings transferred from outside the State); and

''(C) collecting any alternative compliance payments under paragraph (4) of this subsection and using such payments to implement cost-effective efficiency programs.

''(2) SECRETARIAL DETERMINATION.—The Secretary shall make a substantive determination approving or disapproving a State application, after public notice and comment, within 180 days of receipt of a complete application.

''(3) ALTERNATIVE MEASUREMENT AND VERIFICATION PROCEDURES AND STANDARDS.—As part of an application submitted under paragraph (1), a State may request to use alternative measurement and verification procedures and standards to those specified in subsection (f), provided the State demonstrates that such alternative procedures and standards provide a level of accuracy of measurement and verification at least equivalent to the Federal procedures and standards promulgated under subsection (f).

''(4) ALTERNATIVE COMPLIANCE PAYMENTS.—

''(A) IN GENERAL.—As part of an application submitted under paragraph (1), a State may permit retail electricity distributors or retail natural gas distributors to pay to the State, by not later than April 1 of the calendar year immediately following the relevant reporting period, an alternative compliance payment in an amount equal to, as adjusted for inflation in accordance with such regulations as the Secretary may promulgate, not less than—

''(i) $50 per megawatt-hour of electricity savings needed to make up any deficit with regard to a compliance obligation under the applicable performance standard; or

''(ii) $5 per million Btu of natural gas savings needed to make up any deficit with regard to a compliance obligation under the applicable performance standard.

''(B) USE OF PAYMENTS.—Alternative compliance payments collected by a State pursuant to paragraph (4) shall be used by the State to administer its delegated authority under this section and to implement cost-effec-

tive energy efficiency programs. Such programs shall—

"(i) to the extent feasible, achieve electricity savings and natural gas savings in the State sufficient to make up the deficit associated with the alternative compliance payments; and

"(ii) be measured and verified in accordance with the applicable procedures and standards under subsection (f) or paragraph (3) of this subsection, as the case may be.

"(5) REVIEW OF STATE IMPLEMENTATION.—

"(A) PERIODIC REVIEW.—Every 2 years, the Secretary shall review State implementation of this section for conformance with the requirements of this section in approximately one-half of the States that have received approval under this subsection to administer the program, such that each State shall be reviewed at least every 4 years. To facilitate such review, the Secretary may require the State to submit a report demonstrating its conformance with the requirements of this section, including—

''(i) reports submitted by retail electricity distributors and retail natural gas distributors to the State demonstrating compliance with applicable performance standards;

''(ii) the impact of such standards on projected electricity and natural gas demand within the State;

''(iii) an accounting of the State's use of alternative compliance payments and the resulting electricity savings and natural gas savings achieved; and

''(iv) such other information as the Secretary determines appropriate.

''(B) REVIEW UPON PETITION.—Notwithstanding subparagraph (A), upon receipt of a public petition containing credible allegation of substantial deficiencies, the Secretary shall promptly review a State's implementation of delegated authority under this section.

''(C) DEFICIENCIES.—If deficiencies are found in a review under this paragraph, the Secretary shall notify the State and direct it to correct such deficiencies and to report to the Secretary on progress within 180 days of the

receipt of review results. If the deficiencies are substantial, the Secretary shall—

"(i) disallow such reported savings as the Secretary determines are not credible due to deficiencies;

"(ii) re-review the State not later than 2 years after the original review; and

"(iii) if substantial deficiencies remain uncorrected after the review provided for under clause (ii), revoke the authority of such State to administer the program established under this section.

"(6) CALLS FOR REVISION OF STATE APPLICATIONS.—As a condition of maintaining its delegated authority to administer this section, the Secretary may require a State to submit a revised application under paragraph (1) if the Secretary has—

"(A) promulgated new or revised performance standards under subsection (d);

"(B) promulgated new or substantially revised measurement and verification procedures and standards under subsection (f); or

"(C) otherwise substantially revised the program established under this section.

''(i) INFORMATION AND REPORTS.—In accordance with section 13 of the Federal Energy Administration Act of 1974 (15 U.S.C. 772), the Secretary may require any retail electricity distributor, any retail natural gas distributor, any third-party efficiency provider, or such other entities as the Secretary deems appropriate, to provide any information the Secretary determines appropriate to carry out this section.

''(j) STATE LAW.—Nothing in this section shall diminish or qualify any authority of a State or political subdivision of a State to adopt or enforce any law or regulation respecting electricity savings or natural gas savings, including any law or regulation establishing energy efficiency requirements more stringent than those under this section, provided that no such law or regulation may relieve any person of any requirement otherwise applicable under this section.

''(k) PROGRAM REVIEW.—

''(1) NATIONAL ACADEMY OF SCIENCES REVIEW.—The Secretary shall enter into a contract with the National Academy of Sciences under which the Academy shall, not later than July 1, 2017, and every 10 years thereafter, submit to the Secretary and to Congress a comprehensive evaluation of all

aspects of the program established under this section, including—

"(A) an evaluation of the effectiveness of the program, including its specific design elements, in increasing the efficiency of retail natural gas and electricity distribution and consumption;

"(B) the opportunities for additional technologies and sources of efficiency that have emerged since enactment of this section;

"(C) the program's impact on the reliability of electricity and natural gas supply;

"(D) the net benefits or costs of the program to the national and State economies, including effects on electricity and natural gas demand and prices, economic development benefits of investment, environmental benefits, and avoided costs related to environmental and congestion mitigation investments that otherwise would have been required;

"(E) an assessment of the benefits and costs of increasing the performance standards established under subsection (d) of this section;

"(F) the feasibility, advantages, and disadvantages of alternative models for dem-

onstrating compliance with a Federal energy efficiency resource standard, including establishing a national trading system for energy efficiency credits or demonstrating compliance through actual reductions in delivery or sales of electricity and natural gas, rather than on program savings; and

"(G) recommendations regarding potential changes to this section, to regulations and procedures for implementing this section, or to related public policies.

"(2) RECOMMENDATIONS TO CONGRESS.—Not later than January 1, 2018, and every 10 years thereafter, the Secretary shall transmit to the Committee on Energy and Commerce of the United States House of Representatives and the Committee on Energy and Natural Resources of the United States Senate a report making recommendations for modifications and improvements to the program established under this section and any related programs, including an explanation of the inconsistencies, if any, between the Secretary's recommendations and those included in the National Academy of Sciences evaluation under paragraph (1).".

(b) TABLE OF CONTENTS AMENDMENT.—The table of contents of the Public Utility Regulatory Policies Act of 1978 (16 U.S.C. 2601 and following) is amended by adding at the end of the items relating to title VI the following:

"Sec. 610. Federal energy efficiency resource standard.".

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