10. Strategy Selection

Highlights

- *Ameren Missouri has developed a complete decision roadmap to detail the preferred plan and its relationship to several contingency options.*
- *Additional financing analysis indicates aggressive future environmental regulations may have a significant impact on the Company's financial health.*
- *Lost revenue is a major obstacle to the aggressive pursuit of energy efficiency.*
- *The implementation plan contains several actions to preserve contingency resource options.*
- *Ameren Missouri will be watching critical uncertain factors to constantly assess the appropriateness of the preferred plan.*

The risk analysis allows us to analyze the performance of candidate resource plans across various measures under a range of conditions for which we cannot have adequate and complete information at the time a decision must be made. To recognize the potential for conditions that have a direct bearing on the Company's decisions and must be known at the time a decision is made, Ameren Missouri has refined its strategy selection process to include Decision Factors.

10.1 Decision Factors

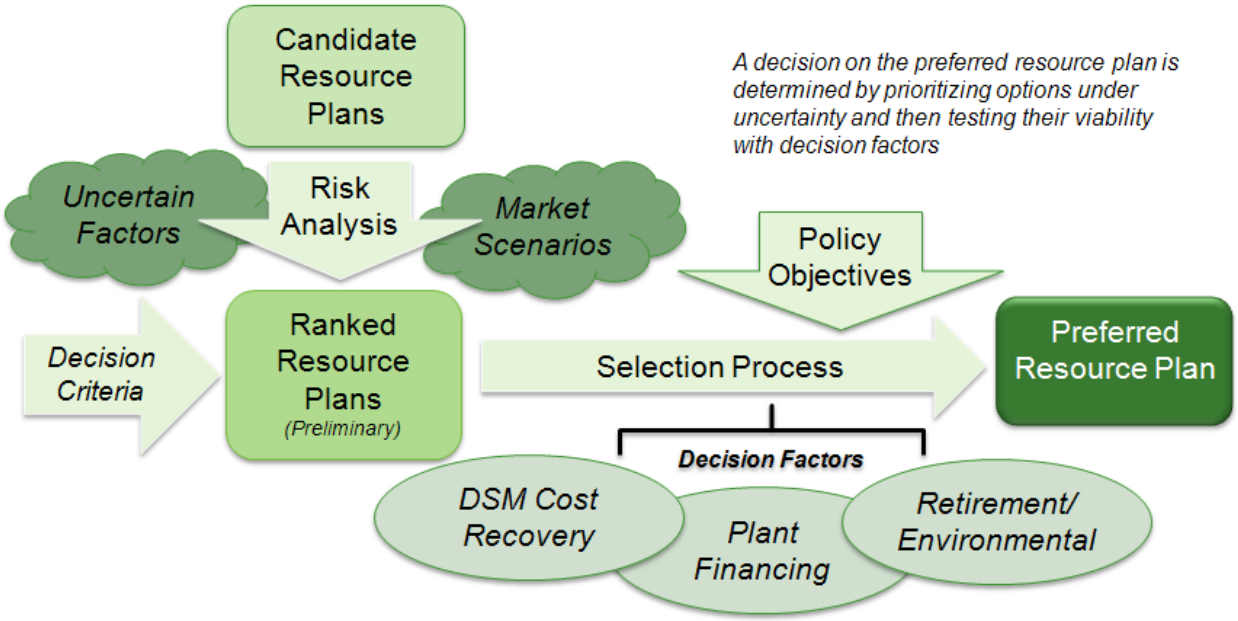
Uncertain factors analyzed in the risk analysis section are all conditions for which we will not have adequate and complete information at the time a decision must be made. For example, estimates of market prices of energy or costs of materials and labor will undoubtedly change to some degree. Although the risk analysis provides insight into how sensitive the decision is to each uncertain factor it does not eliminate or reduce any of the uncertainty.

In contrast, Decision Factors are those conditions under which a decision must be made based on adequate and complete information at the time of a decision. Ameren Missouri has identified three major decision factors: demand-side resource cost recovery and financing, large plant investment financing, and environmental regulation and retirement. The cost recovery framework for demand-side resources is a driving factor in Ameren Missouri's decision regarding the pursuit of energy efficiency programs. This decision factor is discussed at length in section 10.1.1. The regulatory framework for the treatment of construction of large plant investments is likely to drive the decisions we make about such investments. Alternatives for regulatory treatment and a comparison of their relative merits and drawbacks are discussed in section 10.1.2. Finally, changes in environmental regulation can have significant implications

for decisions about how we manage our existing generation fleet, including potential plant retirements. A discussion of potential environmental regulation and the implications for potential plant retirement is presented in section 10.1.3. In evaluating the crucial resource decisions we must make, we cannot ignore the realities of the existing state regulatory framework, financial markets and other real world conditions in which we make these decisions. Therefore, the analysis we have performed to evaluate these decisions and inform our strategy selection reflect these realities, including the effects of regulatory lag and the expectations of investors.

Figure 10.1 illustrates the preferred plan selection process and how it relates to the risk analysis. The risk analysis allows us to prioritize alternative resource plans under uncertainty and under perfect cost recovery while the decision factor analysis further tests the viability of resource plans under real-world conditions and consideration of a full range of decision criteria and decision factors, based on our policy objectives.

Figure 10.1 Illustration of Preferred Plan Selection Process



To this point in the IRP analysis, all plans have been analyzed in MIDAS. While MIDAS is useful for analyzing numerous plans across various scenarios under uncertainty, it can only analyze plans assuming perfect ratemaking. In this context perfect ratemaking is effectively the absence of regulatory lag, which is the difference in time between when costs are incurred and when those costs are included in rates. There are two main factors that influence when costs make it into rates: rate case filing frequency and historical test year lag. It is impractical for the company to forecast when it will file rate cases over the entire planning horizon, so for purposes of our analysis we assumed a rate case every other year. The analysis also reflects the assumption that rates would go into effect six months after the end of the test year. The combination of rate case

cycle and test year lag introduces 18 months of overall regulatory lag. To emulate regulatory lag in the analysis Ameren Missouri developed spreadsheet models based on MIDAS inputs and outputs to insure consistency in the analysis.

10.1.1 Demand-Side Resources Financing

Based on the make-up of the candidate resource plans, Ameren Missouri must decide to pick a preferred plan largely containing demand-side or supply-side resources. Even though demand-side resources have performed well under perfect ratemaking, the decision factor analysis introduces realistic conditions to understand the financial implications of choosing such a plan.

The analysis of demand-side financing considered three major components: program cost recovery, fixed cost recovery, and incentives. Program cost recovery includes all costs to administer and deliver energy efficiency or demand response programs, such as administration, research, design, development, implementation and evaluation. Lost revenue refers to the reduction in margin revenues between rate cases caused by the implementation of utility demand-side resources. Incentives are a financial reward based on some pre-determined performance criteria.

Lost Revenues

Traditional ratemaking was designed to allow utilities to recover both their fixed and variable costs and earn a fair return on their investments. Variable costs are those that vary with the production of energy, like the cost of fuel and purchased power, while fixed costs are associated with activities that do not vary with energy production, like the cost of constructing a plant. The fuel adjustment clause governs a majority of the Company's variable costs, while the fixed costs are largely collected using a variable, or volumetric, rate expressed as ¢/kWh or a combination of ¢/kWh and $/kW, applied to weather normalized and "static" test year sales. The rates developed based on this snapshot of the relationship between the revenue requirement and sales will remain unchanged until the utility's next rate case.

Outside of a rate case, in a future period, the utility's actual revenue will be determined by the variable rate (developed based on the snapshot of test year sales), multiplied by the actual amount of electricity sold. Under traditional ratemaking, if electricity sales increase beyond those used to develop the utility's rates, the utility keeps the additional revenue. This creates an incentive for the utility to maximize its sales, or "throughput". Typically the additional revenues are not simply a bonus to the utility but rather an offset to the rising costs of service, like wages and general material costs, between rate cases. Thus, a traditional ratemaking framework does not align the utility's financial incentives with helping customers use energy more efficiently, because cost recovery and the opportunity to realize fair returns on investment are achieved by selling volumes of electricity. The implementation of energy efficiency programs causes a decrease in

electricity sales, which causes the utility to lose revenue it would have otherwise collected. But even more importantly, it prevents the utility from recovering a portion of its fixed costs that would have been covered by the lost revenues. Any increase in regulatory lag and/or time between rate cases amplifies the disincentive for a utility to support a reduction in sales volume.

Table 10.1 demonstrates the direct relationship between sales volumes and earnings. Below you can see the build-up of the revenue requirement and how much of it is variable costs, fixed costs, and financing costs. It is important to note how much of the fixed costs are being collected through volumetric rates, 92%, since that is the source of the throughput incentive. The table below is also simplified since between rate cases there are typically various other changes in revenue requirement and revenues collected. However, the information shown in this table is still instructive since utility sponsored energy efficiency programs would cause incremental financial harm in addition to the other changing factors that are largely not within the Company's control.

Table 10.1 Earnings Sensitivity to Sales Volume Changes

	Rate Case	1% Reduction in Sales	1% Increase in Sales
Net Fuel Costs (MM$)	$440	$427	$453
Fixed Costs (MM$)	$1,322	$1,322	$1,322
Net Rate Base (MM$)	$6,000	$6,000	$6,000
Debt (MM$)	$2,924	$2,924	$2,924
Interest (MM$)	$174	$174	$174
Equity (MM$)	$3,076	$3,076	$3,076
Return on Equity (ROE, %)	10.1%	10.1%	10.1%
Authorized Earnings (Pre-Tax, MM$)	$504	$504	$504
Revenue Requirement (MM$)	$2,440	$2,427	$2,453
Sales (MWh)	37,301,854	36,932,529	37,674,873
Fixed Cost Revenue Requirement (MM$)	$2,000	$2,000	$2,000
Customer Charge Revenue (MM$)	$161	$161	$161
Fixed Costs in Variable Rates (MM$)	$1,839	$1,839	$1,839
Average Fixed Cost Retail Price ($/KWh)	$0.05	$0.05	$0.05
Actual Fixed Cost Revenue (MM$)	$2,000	$1,982	$2,018
Fixed Cost Revenue Difference (MM$)	$0	-$18	$18
ROE Impact (%)	0.0%	-3.6%	3.6%
ROE Impact (Basis Points)	0	-36	37
Actual ROE	10.1%	9.7%	10.5%

Although the sensitivity analysis above highlights Ameren Missouri's earnings sensitivity to lost revenues it does not show the sensitivity to rate case timing. Figure 10.2 shows the lost revenue impact to earnings of implementing RAP DSM based on three different rate case frequencies – annually, every two years, and every four years. It is noteworthy that, even if Ameren Missouri were to file a rate case every year, the lag in

billing units would still introduce significant lost revenue issues. Figure 10.3 illustrates the relative size of lost revenue impacts comparing the effects from the RAP and Low Risk DSM portfolios. Note that the impact of lost revenues is diminished as energy savings level off, reflecting the reduction in incremental lost sales between rate cases.

Figure 10.2 Earnings Sensitivity to Rate Case Timing

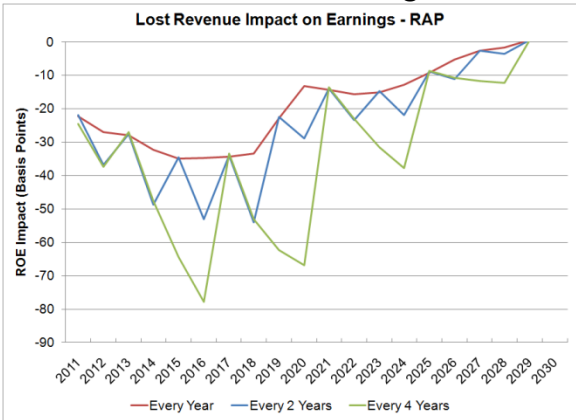
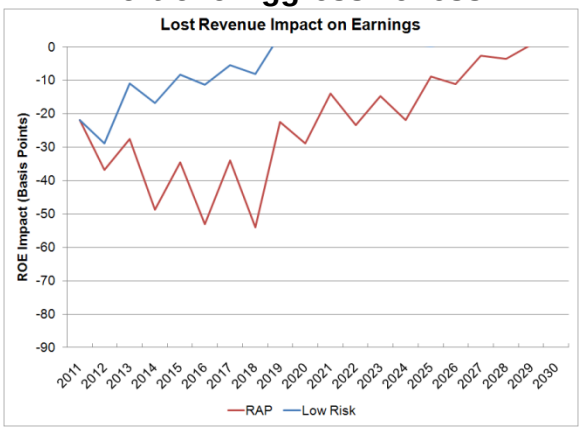


Figure 10.3 Earnings Sensitivity to Portfolio Aggressiveness



It is apparent that lost revenues are a major obstacle to the aggressive pursuit of energy efficiency. Although Ameren Missouri has proposed a Fixed Cost Recovery Mechanism (FCRM) in its current rate case there are still significant improvements needed to the proposal. Similar to the treatment of program cost recovery, including a base lost revenue recovery level in rates retrospectively would significantly dampen the rate at which Ameren Missouri can increase DSM program offerings to customers. Using a forecast of energy efficiency savings supports increasing spending levels over time and is consistent with the new DSM program approval process under MEEIA which includes Commission approval of budgets and savings targets. Since the Commission will have already approved the program savings levels then it is logical that customer rates should be reflective of the approved plan. There is also a tracker with Ameren Missouri's proposed FCRM to true-up any variation between actual and forecasted energy savings.

Program Cost Recovery

The analysis of program cost recovery included two distinct options: capitalization and expensing.

The capitalization of DSM expenses is rate base treatment of the expenses similar to the treatment of a supply-side investment. Costs are booked to a regulatory asset, included in rate base, and amortized over a period of years. Currently Ameren Missouri's DSM expenses are recovered using this approach with a 6-year amortization period. The financing analysis evaluated both 6-year and 3-year amortization.

Expensing DSM expenditures results in those costs being embedded directly in the revenue requirement dollar-for-dollar. The financing analysis evaluated inclusion in rates of both historical and forecast expenses, each with a tracker. The tracker is a regulatory asset that acts as a true-up mechanism between the expenses reflected in rates and the amount actually spent, thereby ensuring full recovery of costs and reducing the disincentive for utility investment in demand-side resources. Balances in the tracker at the time of a rate case would be amortized over three years.

A qualitative comparison of program cost recovery options can be seen in Table 10.2 while Table 10.3 includes a quantitative comparison

Table 10.2 Program Cost Recovery Comparison

Rate Base Treatment		Expense (with Tracker)	
Strength	**Weakness**	**Strength**	**Weakness**
Smaller Initial Rate Impacts	Less Timely Recovery	More Timely Recovery	Higher Initial Rate Impacts
Perceived as Similar Treatment of Supply/Demand-Side	More Recovery Risk	Less Recovery Risk	
	Regulatory Asset "Bubble"	Regulatory Asset Limited to Tracker	

Table 10.3 Program Cost Recovery Comparison

	Historical Expense Tracker	Forecast Expense Tracker	3-Year Capitalize & Amortize	6-Year Capitalize & Amortize
Average ROE	9.53%	9.56%	9.60%	9.69%
PV Utility Earnings ($MM)	$4,916	$4,936	$5,047	$5,110
PV Bills ($MM)	$43,338	$43,368	$43,346	$43,372
Levelized Retail Rate (cents/kwh)	10.98¢	10.99¢	10.98¢	10.99¢
NPV FCF ($MM)	$2,656	$2,676	$2,571	$2,578
Reg. Asset in 2015 ($MM)	$0	$0	$196	$247
Reg. Asset in 2030 ($MM)	$0	$0	$507	$659

The recovery risk of DSM expenditures is considerably higher than that for a supply-side investment. When a traditional supply-side resource goes into service the output is

tangible and easy to measure. With DSM, although the impacts are measured using the most reliable methods available, the load impacts may be heavily disputed and are never *known*. As the assumed recovery period for prudent costs (i.e., the amortization period) is extended, the risk of recovery is also heightened.

The use of a regulatory asset as the DSM cost recovery vehicle is also a concern for Ameren Missouri. At a 6-year amortization, engaging in an energy efficiency portfolio with expenditures as aggressive as those estimated for the RAP portfolio would produce an unamortized regulatory asset of $659 million in 2030. Potential for inconsistent treatment of the regulatory asset could heighten recovery risk and lead the financial community to adjust their views of the Company's expected financial position.

Incentives

Ameren Missouri did not analyze the financial effects of performance incentives in this IRP. It is paramount to institute recovery of potential lost revenues. However, incentives will likely be a necessary component to support the aggressive pursuit of demand-side resources. In the short-term it is quite challenging to aggressively increase the size and scope of Ameren Missouri's DSM programs since those programs are supported by a complex network of suppliers, trade allies, and various other partnerships throughout the community. Incentives will be vital to sustained growth in energy efficiency programs.

In the long-term as savings levels increase they also are expected to become more difficult to obtain, making energy savings more uncertain and therefore making DSM investments more risky. Also, savings levels will be increasingly difficult to achieve as energy saving building codes and end-use efficiency standards are adopted. Incentives will be necessary to supplement program cost recovery and lost revenue recovery to compensate investors for the higher risk of DSM investments compared to traditional supply-side investments. Incentives are also a way for the Missouri PSC to further encourage the aggressive pursuit of cost-effective energy efficiency.

10.1.2 Large Investment Financing

As Ameren Missouri evaluates supply-side resource options it is important to understand the financing implications of our resource decisions. Furthermore, the financial implications of resource decisions must be analyzed concurrently with potential environmental retrofit investments as well as other major investments and ongoing capital funding requirements. The decision factor analysis introduces realistic capital requirements and constraints to understand the financial implications of capital intensive decisions.

Given the capital intensive nature of supply-side resources and environmental retrofits, Ameren Missouri also modeled two ratemaking alternatives to alleviate financial stress

on the company by providing additional cash during construction. The two alternatives are explained below and are known generally as "Construction Work In Progress" ("CWIP") and "Credit Metric Regulation" ("CMR").

Construction Work in Process (CWIP)

Utilities are required to account for all costs incurred during construction. Allowance for funds used during construction (AFUDC) refers to an allowance for financing costs associated with construction. It includes interest expense on the debt issued by utilities to finance new plants and an allowed return for the equity funds contributed by utility shareholders. AFUDC is a type of regulatory asset for which recovery is deferred. It is capitalized with the other construction costs of a plant and placed in rate base when the plant goes into service. Thus, the total cost of a new generating plant includes the direct construction cost of the physical assets and all of the associated financing costs during construction.

Since a partially completed plant is not deemed "used and useful," that is it is not producing any output or current benefit for ratepayers, financings costs are excluded from rates during the construction period. However, with increasing costs to build new generating plants and longer times needed to complete construction, the deferral of financing costs increases financial risks to utilities, customers and investors as indicated below.

- Utilities start experiencing significant cash-flow problems and violations of bond covenants, and deteriorated corporation credit rating, which typically require minimum interest coverage ratios and FFO to Debt Ratio.
- Utility earnings quality begins to erode as AFUDC charges comprise a greater portion of total earnings.
- From a customer perspective, it is more likely that they will experience a rate shock once the total cost of plant is included in rates.

To address these issues, CWIP treatment allows construction costs to be included in rate base, and thus allows rates charged to customers to include the costs of financing during the construction period. With this approach, once CWIP is included in rate base, AFUDC capitalization is discontinued.

Credit Metrics Regulation (CMR)

The CMR alternative provides the utility with cash during a period of major construction by increasing revenues to achieve certain cash metrics and offsetting this additional revenue with regulatory amortization (similar to accelerated depreciation). Two cash metrics were chosen along with benchmarks that would imply a BBB+ (S&P, Baa1 Moody's) bond rating – Funds From Operations (FFO) Interest Coverage at 3.8x and an FFO to Total Debt ratio of 20%.

The CMR method monitors the two credit metrics and determines the amount of after-tax operating cash, and from that pre-tax revenue, required to meet both metrics. This additional revenue is then offset with an expense to recognize the value provided by customers. Regulatory amortization, additional depreciation of the utility's existing net plant, is recorded to offset the revenue along with associated amortization of deferred taxes. This in turn reduces the utility's net rate base during construction. At the same time, the large construction project accrues AFUDC as it normally would under traditional rate-of-return regulation (i.e. no CWIP).

Table 10.4 shows a qualitative comparison of the two non-traditional ratemaking approaches outlined above – CWIP and CMR.

Table 10.4 Financing Alternatives Comparison

CMR		CWIP	
Strength	**Weakness**	**Strength**	**Weakness**
Provided cash supports entire financials, ensures targeted metrics	Greater uncertainty of cash needs during construction	Greater certainty in cash provided	May not provide enough cash to maintain credit metrics
Cash provided only if needed	Uncertain regulatory process	Defined process for implementation	Requires legislative action to implement
Could be used in conjunction with CWIP	Erodes future rate base	Does not erode future rate base	Public perception – repeal of CWIP prohibition

Large Investment Financing Analysis Results

Ameren Missouri limited the financing analysis to the 14 candidate resource plans under just one of the ten planning scenarios, "Business as Usual". Limiting the financing analysis to just one scenario was not expected to affect the results as the scenario impacts are limited to fuel and power prices which are assumed to pass through the Fuel Adjustment Clause (FAC), thus not having more than a short-term impact on net cash flows.

The financing analysis was performed by comparing three financing/ratemaking options. The first option is the traditional utility financing approach for large project investment, in which the utility raises the necessary debt and equity during the construction period and

accumulates financing charges until the plant is placed in service. The second option is CWIP, which allows construction costs to be included in rate base and financing costs to be recovered during the construction period. This CWIP financing approach is applied to both environmental control projects and major generation projects in the analysis. The third option is a hybrid financing approach using CMR for environmental projects then using CWIP for major generation projects.

Since the CMR option must identify a date certain at which additional customer funding ceases and the utility begins to flow back to customers the benefits of the reduction in existing rate base, use of CMR funding for the majority of the planning period was not considered. Doing so would present a situation in which customers were, for practical purposes, not realizing the benefits of "buying down" existing investment. As shown by the results of the financing analysis, CWIP treatment for supply side assets in the latter portion of the planning period is largely sufficient to support the target credit metrics while the benefits of CMR funding for environmental projects in the early portion of the planning period are being flowed back to customers. In fact, only the nuclear plans exhibit a short period of mild financial stress late in the planning horizon that could be managed by temporarily shifting investment priorities.

By comparing the financial ratios among these three financing approaches, it was evident that the driver behind any additional cash needs was triggered by the FFO/Debt benchmark. The analysis indicates that the moderate environmental control scenario could impose mild stress on Ameren Missouri's financing abilities; however, the aggressive environmental control scenario could have a more serious impact on Ameren Missouri's financing abilities. Chapter 10 - Appendix A shows the analysis details for each plan with these three financing approaches. Table 10.5 summarizes the results of the analysis. Note that "Wind Costs" exclude the costs of wind resources used to directly comply with RES requirements and are limited to additional wind resources used as alternative supply-side resources.

Table 10.5 Summary of Large Investment Financial Analysis

Environ. Case	Candidate Resource Plan	Env. Controls ($MM)	1st CC Cost ($MM)	2nd CC Cost ($MM)	Nuclear Cost ($MM)	Wind Cost (MM$)	Simple Cycle ($MM)	CWIP Revenue ($MM) after 2019	CMR Revenue ($MM) before 2019	Minimum FFO/Debt (No CWIP/CMR)	Minimum FFO/Interest (No CWIP/CMR)
Aggressive	Plan C1 Meramec Controlled Combined Cycle	$4,034	$1,099	--	--	--	--	$200	$1,317	12.5%	3.2
Aggressive	Plan R1 Meramec Controlled RAP	$4,034	--	--	--	--	--	--	$1,406	12.6%	3.1
Aggressive	Plan C2 Meramec NG Conversion Combined Cycle	$3,111	$1,099	--	--	--	--	$200	$1,148	13.4%	3.3
Aggressive	Plan R2 Meramec NG Conversion RAP	$3,111	--	--	--	--	--	--	$1,196	13.3%	3.3
Aggressive	Plan C3 Meramec Retired 2016 Combined Cycle, Combined Cycle	$3,111	$771	$1,036	--	--	--	$188	$1,399	12.4%	3.1
Aggressive	Plan R3 Meramec Retired 2016 RAP	$3,111	--	--	--	--	--	--	$1,125	13.6%	3.3
Aggressive	Plan H1 Meramec Retired 2016 Combined Cycle, Nuclear	$3,111	$771	--	$2,776	--	--	$1,307	$1,399	12.4%	3.1
Aggressive	Plan H2 Meramec Retired 2016 Combined Cycle, Simple Cycle	$3,111	$771	--	--	--	$795	$132	$1,399	12.4%	3.1
Aggressive	Plan H3 Meramec Retired 2016 Combined Cycle, Wind/Simple Cycle	$3,111	$771	--	--	$2,331	$375	$169	$1,399	12.4%	3.1
Moderate	Plan B1 Meramec Continues As-Is Combined Cycle	$2,249	$1,132	--	--	--	--	$206	$263	18.5%	4.1
Moderate	Plan B2 Meramec Continues As-Is Nuclear	$2,249	--	--	$3,033	--	--	$1,428	$263	18.0%	3.9
Moderate	Plan R0 Meramec Continues As-Is RAP	$2,249	--	--	--	--	--	--	$356	17.5%	4.0
Moderate	Plan B3 Meramec Continues As-Is Simple Cycle	$2,249	--	--	--	--	$869	$144	$263	18.5%	4.1
Moderate	Plan B4 Meramec Continues As-Is Wind/Simple Cycle	$2,249	--	--	--	$2,623	$422	$190	$263	18.5%	4.1

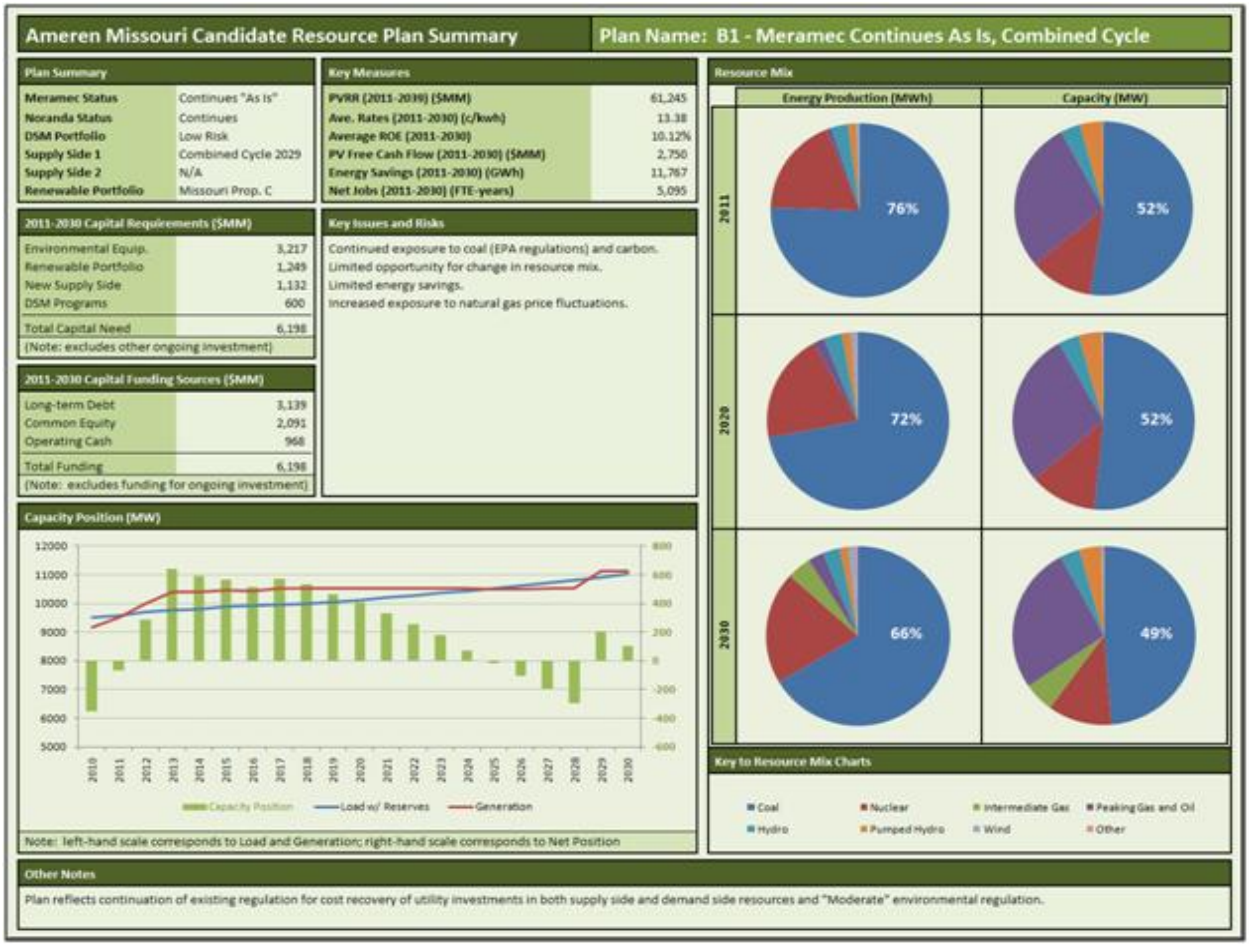
10.1.3 Environmental/Retirement

The Risk Analysis results in Chapter 9 indicate that under the moderate environmental scenario it is more attractive not to retire Meramec in the planning horizon. However, considering PVRR only, the Meramec decision is not clear cut under the aggressive environmental scenario. The natural gas boiler conversion and environmental control options are similar on the cost comparison with a slight advantage to adding controls. Considering all scenarios together the PVRR metric shows the retirement option is slightly more expensive, but under cap and trade carbon regulation the costs are even closer. In fact, the retirement option results in lower cost than other Meramec options when coupled with RAP DSM. Furthermore, the analysis of alternative resource plans showed that earlier retirement is more costly than later retirement. It is likely the retirement would be lower cost at some point in the planning horizon, but the timeline of environmental regulations limits optimal planning. With the PVRR results in such a tight range, the cost metric alone is not sufficient to support a decision. Incorporating the other measures in the decision scorecard allows decision makers to consider other factors that influence the Meramec decision, such as the risk of stranded costs, the age of the plant, and the risk of additional environmental regulations.

10.2 Preferred Plan Selection[1]

In selecting its Preferred Resource Plan Ameren Missouri again looked to its policy objectives and supporting metrics to compare the remaining candidate resource plans. To better support the decision making process, dashboards of the candidate resource plans were developed that summarize the critical aspects of each plan in an intuitive manner. Figure 10.4 is an example of the dashboard. Chapter 10 - Appendix B shows dashboard summaries for all 14 candidate resource plans.

Figure 10.4 Sample Candidate Resoure Plan Dashboard



To select the Preferred Resource Plan Ameren Missouri relied on a scorecard approach similar to that used to perform an initial screen of the 216 alternative resource plans, as discussed in Chapter 9. However, that process was limited to purely quantitative measures since the screening included a large number of plans. With only 14 plans there is greater opportunity to use both quantitative and qualitative reasoning to rank plans according to the same policy objectives. Figure 10.5 shows that comparison.

[1] 4 CSR 240-22.010(2)(B); 4 CSR 240-22.010(2)(C);
4 CSR 240-22.010(2)(C)1.; 4 CSR 240-22.010(2)(C)2.; 4 CSR 240-22.010(2)(C)3.
4 CSR 240-22.070(11)(F); EO-2007-0409 – Stipulation and Agreement #38(C)

Figure 10.5 Preferred Plan Selection Scorecard

Policy Objectives, Weights and Measures		Candidate Resource Plans													
Policy Objective	Measure(s)	B1 MM Continues "As Is" Low Risk DSM CC in 2029	B2 MM Continues "As Is" Low Risk DSM Nuclear in 2028	B3 MM Continues "As Is" Low Risk DSM SC in 2029	B4 MM Continues "As Is" Low Risk DSM Wind/SC in 2028	R0 MM Continues "As Is" RAP DSM	R1 MM Controlled 1/1/2016 RAP DSM	R2 MM Gas Conv. 1/1/2016 RAP DSM	R3 MM Retired 12/31/2015 RAP DSM	C1 MM Controlled 1/1/2016 Low Risk DSM CC in 2028	C2 MM Gas Conv. 1/1/2016 Low Risk DSM CC in 2028	C3 MM Retired 12/31/2015 Low Risk DSM CC in 2016 CC in 2026	H1 MM Retired 12/31/2015 Low Risk DSM CC in 2016 Nuclear in 2025	H2 MM Retired 12/31/2015 Low Risk DSM CC in 2016 SC in 2026	H3 MM Retired 12/31/2015 Low Risk DSM CC in 2016 Wind/SC in 2024
Environmental/Diversity	Resource Diversity	○	○	○	○	○	◔	◑	◕	◔	◑	◕	●	◕	●
	Carbon Emissions														
	SO2 Emissions														
	NOx Emissions														
Financial/Regulatory	ROE	●	◔	●	◑	◔	○	◔	◔	◔	◕	◕	◔	◕	◑
	EPS														
	ROIC														
	Free Cash Flow														
	Stranded Cost Risk														
	Transaction Risk														
	Recovery Risk														
Customer Satisfaction	Average Rate Impact	●	●	●	●	◔	◔	◔	◔	◕	◕	◑	◑	◑	◑
	Single Year Rate Impact														
Economic Development	FTE-Years	○	●	○	○	◕	◕	◑	◑	◔	○	◔	●	◔	◔
Cost	PVRR	◕	◕	◕	◕	●	◕	◕	◕	◔	◔	◔	◔	◔	◔
Overall Assessment		Top	Top	Top	Top	Mid	Bottom	Mid	Top	Bottom	Mid	Mid	Top	Mid	Mid

Scoring Guide	
Significant Advantage	●
Moderate Advantage	◕
No Advantage or Disadvantage	◑
Moderate Disadvantage	◔
Significant Disadvantage	○

- Top-tier plan
- Mid-tier plan
- Bottom-tier plan

Notes on Scores by Policy Objective	
Environmental/Diversity	Meramec continues "as-is" plans score "significant disadvantage" due to continuation of coal/carbon without controls. Meramec control plans score "moderate disadvantage" due to continued coal/carbon. Nuclear and wind plans score "significant advantage" due to retirement of coal and addition of zero-emission resources and intermediate gas for diversity. Retirement with RAP scores "moderate advantage" due to coal reduction and no additional emitting resources, but also no additions to generation diversity. CC/SC plans score "moderate advantage" due to retirement of coal and addition of intermediate gas earlier in the planning period. Gas conversion plans score "no advantage or disadvantage" as they provide no additional resource diversity (i.e. intermediate gas) while continuing reliance on fossil fuel.
Financial Regulatory	RAP DSM plans score low due to absence of lost revenue relief and potential for stranded costs. Meramec control plans score lower due to potential for stranded investment in control equipment. Nuclear plans score low due to high capital requirements. Wind plans score "no advantage or disadvantage" due to large capital requirements, although financing and recovery issues may be manageable. CC and SC plans, with or without Meramec gas conversion, score "moderate advantage" due to relatively low capital requirements. Meramec continues "as-is" plans with combined cycle and simple cycle score higher due to minimal capital requirements.
Customer Satisfaction	RAP DSM plans score low due to increase in average rates, partially offset by customer perception of resource conservation. Meramec control and gas conversion plans with Low Risk DSM score "moderate advantage" due to modest rate impact. Meramec continues "as-is" plans score "significant advantage" due to minimal rate impacts through most of the planning horizon. Meramec retirement plans with new supply side resources score "no advantage or disadvantage".
Economic Development	Nuclear plan scores "significant advantage" due to high number of skilled construction and operations jobs. RAP DSM plans score higher due to significant number of jobs related to sale, installation and maintenance of new equipment and harvesting of older equipment. Meramec gas conversion plans score lower due to loss of jobs at Meramec with minimal offsetting job creation. Meramec retirement plans with supply side replacement score low due to loss of jobs at Meramec offset by near term construction jobs for combined cycle. Meramec continues "as-is" plans with supply side resources other than nuclear score "significant disadvantage" due to absence of substantial job creation.
Cost (PVRR)	RAP DSM plan with Meramec continuing "as-is" scores "significant advantage" due to performance on PVRR measure. Other plans with Meramec continuing "as is" score "moderate advantage" due to continued operation of Meramec without the cost of controls or replacement resources. RAP DSM plans with Meramec controlled, converted or retired score "moderate advantage" due to higher cost compared to RAP with Meramec continuing. Other plans score "moderate disadvantage" due to higher total cost. (note: Pumped Hydro and coal would be considered "significant disadvantage").

Key to Abbreviations

CC = Combined Cycle Gas Turbine Generator MM = Meramec RAP = Realistic Achievable Potential DSM Portfolio CC = Combined Cycle Gas Turbine Generator SC = Simple Cycle Gas Turbine Generator

Figure 10.5 does not represent a definitive determination of the Preferred Resource Plan but rather acts as a tool to facilitate deeper discussion and consideration by Ameren Missouri's senior management in selecting the Preferred Resource Plan. The results of this assessment illustrate a few important points. First, plans that include the addition of environmental controls to Meramec are the least attractive. Second, plans that include a natural gas boiler conversion for Meramec are less attractive but are more attractive than those that reflect the addition of environmental controls. Third, plans that reflect moderate environmental regulation and thus do not include a retirement of Meramec are highly attractive based on PVRR. Finally, in the case of Meramec retirement, a DSM plan or natural gas/nuclear plan are most attractive.

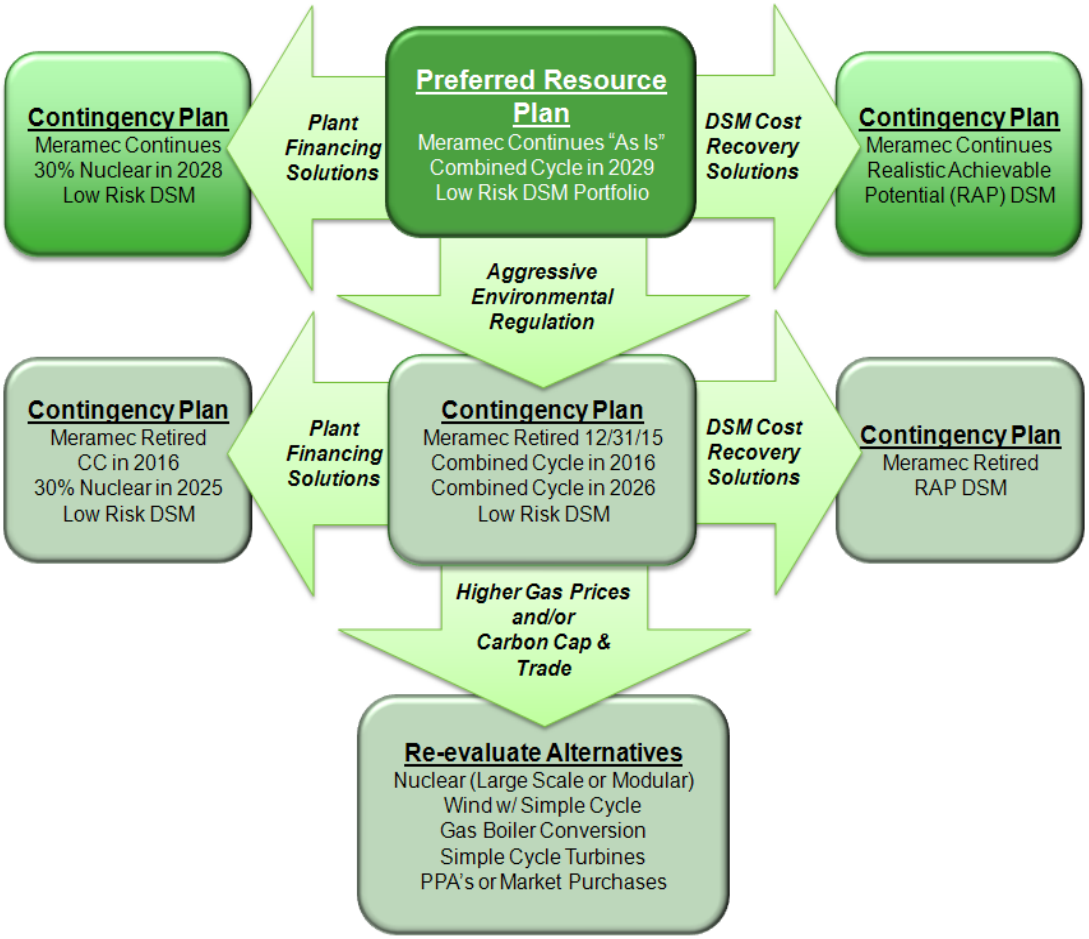
Although all the candidate resource plans with Meramec continuing uncontrolled are low cost plans, the nuclear plan (B2) and RAP plan (R0) are less attractive given the constraints of current state policies and regulations. The risk analysis has shown the combined cycle resource option consistently outperforms the combination of wind and simple cycle on total cost. The addition of wind resources is also expected to be required to meet RES requirements, and the addition of wind resources beyond those included in the RES compliance renewable portfolio would result in rate impacts that exceed the 1% cap. While the simple cycle resource option also performs well on total cost, Ameren Missouri's existing resource portfolio includes a robust fleet of peaking resources. For that reason, additional gas-fired peaking generation is considered a contingency resource option that may be pursued under circumstances when rapid resource deployment may be needed. Therefore, the Preferred Resource Plan under moderate environmental regulations is the continuation of Meramec operation with no additional environmental controls ("as-is") and construction of a gas-fired combined cycle plant to be placed in service in 2029 (Plan B1).

If Ameren Missouri is faced with aggressive environmental regulations then previous analysis indicates retirement of Meramec is preferred. Of the top plans with Meramec retirement there are three top ranking options: construction of two combined cycle plants (Plan C3), construction of a combined cycle plant and a nuclear plant (Plan H1), and a DSM-only plan (Plan R3). The combined cycle/nuclear plan and the DSM-only plan are less attractive under the constraints of current state policies. Therefore the top ranking plan under current state policies and aggressive environmental regulations is the plan with two combined cycle plants (Plan C3). It must be noted that both the combined cycle/nuclear and DSM-only plan performed better across the policy objectives but are considered contingency options that may be triggered when state policy is better aligned with their implementation.

10.3 Resource Acquisition Strategy[2]

The resource acquisition strategy has three main components. First is the Preferred Resource Plan which is discussed in more detail in Section 10.3.1. The Preferred Resource Plan includes the continued operation of Meramec through the planning horizon with no addition of significant environmental controls, the addition of a combined cycle plant in 2029, and the Low Risk DSM portfolio. The second component of the resource acquisition strategy is contingency planning. Figure 10.6 shows the Preferred Resource Plan as well as a decision roadmap that identifies several contingency options. The final component of the resource acquisition strategy is the implementation plan which includes details of major actions over the next three years.

Figure 10.6 Decision Roadmap



[2] 4 CSR 240-22.070(11)(G)

10.3.1 Preferred Plan[3]

As discussed in Section 10.2, the Preferred Resource Plan, under moderate environmental regulations, is the continued operation of Meramec without the addition of major environmental controls, a new combined cycle plant in 2029, and the Low Risk DSM portfolio. Following is a more detailed description of the plan components.

Demand Side Resources

The preferred plan includes a modest level of demand-side resources with an average annual energy efficiency budget of approximately $20 Million throughout the planning horizon. Demand response programs are expected to start in 2016 with an average annual budget of a little over $10 Million.

Renewables

Chapter 5 includes a detailed description of renewable resource requirements. In summary, Ameren Missouri will need additional non-solar renewable energy credits starting in 2019. It is estimated that, subject to the 1% rate cap, approximately 240 MW of wind resources and 10 MW of landfill gas will be added through 2030. Initially, solar compliance will be met with the purchase of renewable energy credits. Long-term compliance with the solar requirements is expected to be met through either the purchase of S-RECs, from Ameren Missouri customers or Independent Power Producers, or the installation of utility-scale solar resources.

Supply-Side Resources

The Preferred Resource Plan calls for a 600 MW combined cycle plant near the end of the planning horizon in 2029. The combined cycle plant is a placeholder and can represent either a Greenfield plant or conversion to combined cycle operation at Venice.

10.3.2 Contingency Planning[4]

Figure 10.6 presents the entire decision roadmap from the Preferred Resource Plan to various contingency options. Regardless of the future stringency of environmental regulations, both Realistic Achievable Potential (RAP) DSM and nuclear are attractive alternatives to gas-fired combined cycle. However, because of the financial implementation barriers posed by existing state policies, both RAP DSM and nuclear are impractical at this time.

If environmental regulations become significantly more aggressive than those in place today and would require significant capital investment in environmental retrofits at Meramec, then Meramec would be retired. In this case resource needs would be advanced considerably and necessitate the addition of more supply-side resources. Construction of a gas-fired combined cycle plant can be completed in the shorter time

[3] 4 CSR 240-22.070(6); 4 CSR 240-22.070(6)(A); 4 CSR 240-22.070(10)(A)
[4] 4 CSR 240-22.070(10)(D); 4 CSR 240-22.070(10)(C)

period and is therefore the most attractive supply-side option in the near term. If the potential financial barriers to nuclear construction are resolved then nuclear becomes a viable and attractive secondary supply-side resource option. If financial barriers to the aggressive pursuit of DSM are removed then RAP DSM becomes a viable option. If Ameren Missouri were to pursue the RAP DSM portfolio no supply-side resources would be needed in the planning horizon, even with the retirement of Meramec, assuming customer response to program incentives is consistent with our estimates.

Even if DSM implementation barriers are removed it is still important to preserve the most promising supply-side resource options as there is still significant uncertainty about the performance of DSM programs and overall load growth. Ameren Missouri will be monitoring expected DSM program performance and other uncertainties closely and will be taking steps in the implementation period to preserve attractive resource options.

10.3.3 Implementation Plan[5]

As mentioned earlier the implementation plan outlines the major activities to be completed during the next three years. Below is a description of those major activities.

Demand-Side Resources Implementation

The detailed implementation plan for Low Risk DSM is presented in Chapter 7 and includes program templates, evaluation strategies, energy and peak savings goals, budgets, and other information for the implementation period. Table 10.6 provides a summary of the annual energy savings and peak reduction goals, as well as annual budgets, for each program.

Table 10.6 DSM Implementation Plan Summary

LOW RISK	Incremental GWh			Incremental MW			Budget (millions of $)		
	2012	2013	2014	2012	2013	2014	2012	2013	2014
Lighting	44.3	30.5	17.1	1.3	0.9	0.5	$3.8	$2.7	$1.5
HVAC	9.2	10.8	14.0	4.4	5.1	6.5	$3.1	$3.7	$5.0
Appliance Recycling	7.0	3.9	3.4	1.0	0.6	0.5	$1.7	$1.0	$0.9
Low Income	3.3	2.8	2.2	0.2	0.2	0.2	$2.8	$3.0	$3.1
EE Residential Total	**63.9**	**48.1**	**36.8**	**6.9**	**6.8**	**7.7**	**$11.3**	**$10.3**	**$10.5**
Standard	9.8	11.5	13.7	3.9	4.6	5.5	$2.9	$3.4	$3.9
Custom	23.6	17.7	19.2	6.3	4.8	5.3	$5.6	$4.3	$4.8
RCx	1.0	0.8	0.8	0.2	0.2	0.2	$0.1	$0.1	$0.1
New Construction	1.2	1.4	1.7	0.4	0.5	0.6	$0.4	$0.5	$0.7
Multifamily Common	0.9	0.9	0.9	0.2	0.2	0.2	$0.2	$0.2	$0.2
EE Business Total	**36.5**	**32.3**	**36.3**	**10.9**	**10.2**	**11.7**	**$9.2**	**$8.4**	**$9.7**
EE PORTFOLIO TOTAL	**100.4**	**80.4**	**73.1**	**17.8**	**17.0**	**19.4**	**$20.5**	**$18.8**	**$20.2**

[5] 4 CSR 240-22.070(9); 4 CSR 240-22.070(10)(B); 4 CSR 240-22.070(9)(C); 4 CSR 240-22.070(9)(D)

Demand-Side Resources Financing

As we have determined based on the results of the IRP analysis, demand-side resources carry the lowest overall resource cost but are constrained by the misalignment of financial incentives with the goal of helping customer use energy more efficiently. The analysis discussed in Section 10.1.1 indicates the need for a complete framework of appropriate program cost recovery, lost revenue recovery, and incentives. The passage of MEEIA has created a new process that includes Commission approval of demand-side management programs, but those rules have not been fully promulgated as of this IRP filing. Ameren Missouri will continue to advocate for better alignment of utility financial incentives to ultimately support the state's goal of achieving all cost-effective DSM.

Combined Cycle

Initially, the supply-side screening analysis included three combined cycle options: greenfield, Venice conversion, and retrofit at Meramec. As our analysis proceeded it became evident that the three options were nearly indistinguishable from a cost standpoint and Ameren Missouri continued to analyze the greenfield option to represent the combined cycle resource option. However, to be prepared for implementation, particularly if the need is sooner than that shown in the Preferred Resource Plan, Ameren Missouri will need to perform further analysis to determine which specific option is best.

Nuclear

To preserve the nuclear resource option, Ameren Missouri will support legislation that allows utilities to recover the costs of successfully obtaining an early sire permit.

Large Investment Financing

The analysis presented in Section 10.1.2 indicates the potential for significant financial stress caused by more stringent environmental regulations. Ameren Missouri will continue to explore regulatory and legislative opportunities to provide both the Company and the PSC with options to retain maximum flexibility with respect to resource options and financing during periods of significant additional investment.

Renewables

As outlined in Chapter 5, Ameren Missouri expects to be in compliance with the non-solar portion of Missouri's Renewable Energy Standard (RES) throughout the implementation period without the addition of new renewable resources. However, action is still needed to comply with the solar requirements. Ameren Missouri expects to comply through the acquisition of Solar Renewable Energy Credits (S-RECs) from three main sources: wholesale purchases, installation of solar panels at

Table 10.7
Solar Energy Needs

Year	Solar Requirement
2011	15,049
2012	15,312
2013	15,387
2014	38,718

Ameren's corporate headquarters, and Ameren Missouri's Standard Offer Contract. The Standard Offer Contract refers to the S-RECs purchased from customers who install and own qualifying solar facilities. It is expected a large portion of the S-RECs will be provided by wholesale purchases. Although final compliance is based on actual retail sales, Table 10.7 contains the forecasted amount of solar RECs needed.

Meramec

The ongoing capital costs, exclusive of environmental controls, to keep a plant of Meramec's vintage operating safely and reliably will be a key consideration in the eventual retirement decision. Ameren Missouri will continue to investigate those costs in detail to adequately support the continued analysis of Meramec's potential retirement.

Environmental

Ameren Missouri will conduct appropriate engineering studies to refine the cost estimates of environmental controls required to meet more stringent environmental regulations.

10.3.4 Monitoring Critical Uncertain Factors[6]

Figure 10.6 shows the Preferred Resource Plan along with a complete decision roadmap with various contingency options. Ameren Missouri will be monitoring the critical uncertain factors that would help determine whether the Preferred Resource Plan is still valid and whether contingency options should be pursued. Below is a description of how Company decision makers will be monitoring the factors most relevant to future resource decisions.

Carbon Policy

Ameren Missouri senior management and the Strategic Initiatives Group will monitor and evaluate developments on possible carbon legislation and potential carbon policy outcomes and discuss significant developments and changes. Absent the need for more frequent discussions, as determined by Ameren Missouri senior management at their sole discretion, these discussions will occur annually.

Gas Prices

The President and CEO of Ameren Missouri is updated at least annually by the Corporate Planning and Risk Management groups on trends and drivers of natural gas prices as part of the update on the drivers of forward commodity prices. Ameren Missouri senior management may, in its sole discretion, request more frequent updates to discuss significant changes in natural gas prices.

[6] EO-2007-0409 – Stipulation and Agreement #36; 4 CSR 240-22.070(10)(E)

Load Growth

Corporate Planning will update the capacity position annually based on the latest assumptions regarding load growth. Any significant changes in resource needs, whether timing or size, will be communicated to Ameren Missouri senior management.

Project Costs

Corporate Planning, with support from other groups and as directed by Ameren Missouri senior management, will monitor trends in capital costs for all of the candidate supply-side resource options and environmental compliance retrofits with careful attention to those included in the preferred and contingency resource plans. Any significant changes will be communicated to Ameren Missouri senior management.

Demand-Side Resource Impacts and Cost

Corporate Planning will continue to evaluate the cost-effectiveness of its DSM programs internally and through the evaluation process. Furthermore, Ameren Missouri will update the results of its DSM potential study to incorporate the latest market trends and service territory experience. Any major deviations from planning assumptions like participation rates, technology costs, and customer opt-out will be communicated to Ameren Missouri senior management.

Interest Rates and Financial Metrics

Corporate Planning and Treasury will continue to evaluate the impact of interest rates and various financial metrics on revenue requirements consistent with maintaining investment grade credit ratings. This evaluation will include an analysis of the level of interest rates and financial metrics that would trigger consideration of a contingency plan.

10.4 Compliance References