

11. Stakeholder Process

Highlights

- *Ameren Missouri conducts an inclusive stakeholder process to solicit feedback on its assumptions and analysis methods.*
- *Ameren Missouri hosted a stakeholder meeting in February 2014 to present our key assumptions and solicit stakeholder feedback.*
- *We have incorporated comments received from stakeholders on draft reports shared during the development of our IRP filing.*
- *Ameren Missouri has also addressed Special Contemporary Issues as ordered by the Missouri Public Service Commission.*

Ameren Missouri conducts an inclusive stakeholder process to solicit feedback on its assumptions and analysis methods used for integrated resource planning. Our stakeholder group includes representatives of state agencies, consumer advocates and environmental advocates. Our process includes the following key elements:

- A stakeholder workshop to review the assumptions and analytical methods used in the analysis of resource alternatives and selection of our preferred resource plan
- Distribution of drafts of certain chapters of our filing and review and incorporation, as appropriate, of stakeholder comments on those drafts
- Addressing Special Contemporary Issues as part of our analysis as suggested by stakeholders and ordered by the Missouri Public Service Commission (Commission)

This chapter describes how these key elements were satisfied pursuant to the Commission's rules and its order on Special Contemporary Issues.

11.1 Stakeholder Group

Ameren Missouri's stakeholder group includes representatives of the following state agencies and private organizations:

- Commission Staff (Staff)
- Office of Public Counsel (OPC)
- Department of Economic Development – Division of Energy (DE)
- Missouri Industrial Electric Customers (MIEC)
- Missouri Energy Group (MEG)
- Natural Resources Defense Council (NRDC)
- Sierra Club
- Renew Missouri

11.2 Stakeholder Workshop

On February 3, 2014, Ameren Missouri hosted a stakeholder workshop at its general offices in St. Louis to present key assumptions and analytical methods to be used in our analysis of resource choices and decisions necessary to meet the electric energy needs of our customers in a safe, reliable, environmentally responsible and cost-effective manner. The workshop included discussion of assumptions for:

- Forecasts of customer energy consumption and peak demand, which is discussed in detail in Chapter 3
- Potential, including costs and benefits, for utility programs to help customers use energy more efficiently and defer or reduce the need for new sources of electric generation, which is discussed in detail in Chapter 8
- Options, including costs and operating characteristics, for new generation, which are discussed in detail in Chapter 6
- Delivery infrastructure (transmission and distribution) needs and plans and relationships to meeting customers' needs, which are discussed in detail in Chapter 7
- Options and costs, including the expected need for environmental equipment investments, for the operation of our existing generating portfolio, which are discussed in detail in Chapters 4 and 5

We also presented our alternative resource plans from which we would select a preferred resource plan and the planned assumptions and analytical methods we expected to use to evaluate those alternative resource plans. This discussion covered the following topics:

- Alternative resource plans, which are presented in Chapter 9
- Assumptions for key variables that could affect the performance of alternative resource plans, as discussed in Chapters 2 and 9
- Our approach to sensitivity and risk analysis, as discussed in Chapter 9
- Planning objectives and measures used to guide the development of alternative resource plans, as discussed in Chapter 9, and to select the preferred resource plan, as discussed in Chapter 10

Feedback received at the workshop was noted and considered in our continuing analysis to support our IRP filing.

11.3 Stakeholder Comments on Draft Report

Following the stakeholder workshop in February, Ameren Missouri distributed drafts of certain chapters for its filing to stakeholders for review and comment. The following chapters were distributed:

- Chapter 3 – Load Analysis and Forecasting
- Chapter 4 – Existing Supply Side Resources
- Chapter 5 – Environmental Regulation
- Chapter 6 – New Supply Side Resources
- Chapter 7 – Transmission and Distribution

In addition, Ameren Missouri indicated that its Demand Side Management Market Potential Study (DSM Potential Study), finalized in early 2014, would serve as a proxy for a draft of Chapter 8 – Demand Side Resources. The DSM Potential Study serves as the source of key assumptions for use in the development of demand side resource portfolios for inclusion in alternative resource plans. Ameren Missouri conducts a rigorous stakeholder process to review and test its assumptions for the DSM Potential Study as it is being developed.

Two stakeholder groups provided written comments to Ameren Missouri on its draft report in accordance with the Commission's IRP rules – Staff and NRDC / Sierra Club. Their comments and our review of them are discussed in the following sections.

11.3.1 Comments of Staff

Staff provided written comments on May 14, 2014. Following are the comments provided by Staff and Ameren Missouri's review of each, as well as an indication of any discussion included in our filing to address each comment.

- A. Staff indicated a concern regarding the DSM portfolios included in Ameren Missouri's alternative resource plans and that inclusion of these portfolios may not satisfactorily facilitate the identification of all cost-effective demand side savings available to Ameren Missouri and its customers.***

Review and Application – Ameren Missouri has included in Chapter 10 of its filing a discussion of this issue. As noted in Chapter 10, the identification of all cost-effective demand side savings occurs over time and with the aid of ongoing research, analysis, marketing and evaluation of DSM programs and is impossible to quantify in advance with any degree of accuracy for a twenty year period. Missouri's processes to implement the Missouri Energy Efficiency Investment Act (MEEIA) recognize the need for such ongoing adjustment and refinement with the inclusion of requirements for frequent updates of demand side potential, annual evaluations of program performance, and establishment of shorter term goals, cost recovery mechanisms and utility incentives. Ameren Missouri has more explicitly evaluated the savings potential for its next three-year plan of programs to be implemented in 2016-2018 and has determined that our preferred plan allows us to achieve all cost-effective demand side savings for programs implemented under that three-year plan.

- B. Staff indicated a concern with Ameren Missouri's scorecard approach for evaluation of alternative resource plans, which was used in the development of Ameren Missouri's 2011 IRP filing. Staff suggested that any scorecard include numeric scores rather than qualitative symbols to assess alternative resource plans.***

Review and Application – Ameren Missouri understands Staff's concern and has used a scorecard that relies on numeric scores rather than qualitative symbols to score its alternative resource plans. The scorecard and scoring approach are discussed in Chapter 10. The scorecard showing the scores for each alternative resource plan for each of Ameren Missouri's planning objectives, as well as an overall composite score, is presented in Appendix A to Chapter 10.

- C. Staff expressed a concern regarding the absence of certain specific filing requirements with respect to Ameren Missouri's load forecast analysis.***

Review and Application – Ameren Missouri has included all the specific requirements in its filing in Chapter 3 and Appendix A to Chapter 3.

- D. Staff expressed concern regarding assumptions that influence independent variables that affect load forecasts. Staff suggested inclusion in Ameren Missouri's filing of a discussion of the relationship between economic***

growth and energy consumption, with specific consideration of this relationship for Ameren Missouri's service territory.

Review and Application – Ameren Missouri has included a discussion of the relationship between economic growth and energy consumption in Chapters 2 and 3. We have also included specific discussion of the role of economic growth in our service territory in the development of forecasted electric demand in Chapter 3.

E. Staff provided comments on Chapter 4 – Existing Supply Side Resources. The comments and Ameren Missouri's review and application of each are summarized and discussed together for each comment below.

Review and Application

- i. Staff requested that load and reserve margin requirements be included in a chart of generating capacity and that the nature of the capacity values be indicated. Rather than add load and reserve margin requirements to a chart that is intended to indicate only available generation in the proper context of Chapter 4. Ameren Missouri has included tables and charts with generation, load and reserve margin requirements in Chapter 9, which deals with the development of integrated alternative resource plans to meet load and reserve requirements. Generator ratings shown in Chapter 4 are on an installed capacity (ICAP) basis.
- ii. Staff requested that a chart or table be included to indicate the projected reserve margin requirements of the Midcontinent Independent System Operator (MISO). Ameren Missouri has included a table of the annual reserve margin requirements of MISO in both Chapter 2 and Chapter 9.
- iii. Staff requested that a discussion be included regarding the status of energy from Ameren Missouri's Purchased Power Agreement (PPA) with Horizon's Pioneer Prairie Wind Farm (Pioneer Prairie) as a renewable energy resource while its cost is excluded from consideration of the 1% rate impact limitation in the Missouri Renewable Energy Standard (RES). Ameren Missouri has included a discussion of the requirements of the RES in Chapter 2 and its analysis of Ameren Missouri compliance in Chapter 9. In that analysis, renewable energy credits (RECs) generated by Pioneer Prairie are used as eligible RECs for meeting the RES requirements, and the cost has been excluded from the calculation of the 1% rate impact limitation.
- iv. Staff requested a discussion of RES requirements in Chapter 6. As explained above, Ameren Missouri has included a discussion of RES

requirements in Chapter 2 and Ameren Missouri's analysis of RES compliance in Chapter 9.

- v. Staff requested that a single table be included that summarizes certain information regarding potential supply side resource options that were screened by Ameren Missouri. Ameren Missouri conducted its screening of potential supply side options in groups according to fuel sources to ensure that options within each group would be considered for inclusion in alternative resource plans. The groups screened were – renewable resources, storage resources, nuclear resources, and coal and gas resources. As a result the conclusions of our screening analysis are presented and summarized at the group level, including multiple such tables as the one requested by Staff.

F. Staff provided comments on Chapter 6 – New Supply Side Resources. The comments and Ameren Missouri's review and application of each are summarized and discussed together for each comment below.

Review and Application

- i. Staff requested that a discussion of resource needs, including existing supply side resource and reserve margin requirements, be included. As explained previously, Ameren Missouri has included in Chapter 9 an evaluation of resource needs, including existing and new resources, forecasted demand and reserve margin requirements.
- ii. Staff requested that a single table be included that summarizes certain information regarding potential supply side resource options that were screened by Ameren Missouri. As explained above, our screening of supply side resource options was conducted using groups of options and is thus organized in that manner.

G. Staff provided comments on Chapter 7 – Transmission and Distribution. The comments and Ameren Missouri's review and application of each are summarized and discussed together for each comment below.

Review and Application

- i. Staff requested the inclusion of a complete description of Ameren Missouri's affiliate relationship with Ameren Transmission Company of Illinois. That description has been included in Chapter 7.
- ii. Staff requested that discussion regarding Ameren Missouri's optimization of investment in advanced technologies be included. That discussion has been included in Chapter 7.

- iii. Staff requested that tables and discussion be provided regarding the employment of advanced transmission technologies. Ameren Missouri has relied on the provision in the Commission rule that permits Ameren Missouri to rely on the MISO planning process for consideration of advanced transmission technologies. Ameren Missouri has provided in its filing a link to the MISO Transmission Expansion Plan (MTEP) documents relied upon by Ameren Missouri and has included supplemental discussion and analysis in Chapter 7.
- iv. Staff has requested the inclusion as an appendix of excerpts from a 2009 study conducted by Ameren Missouri with EPRI regarding efficiency projects across Ameren Missouri facilities, including transmission and distribution facilities. Because of the age of the report, Ameren Missouri has instead provided new discussion that leverages the conclusions of the 2009 study and includes updated evaluation and conclusions. To avoid confusion with older evaluations and conclusions, Ameren Missouri has elected not to include portions of the 2009 report as an appendix. The full report is available as part of the workpapers filed in connection with Ameren Missouri's 2011 IRP filing, or upon request subject to applicable restrictions.
- v. Staff requested that a discussion of Ameren Missouri's Voltage Control Pilot and how it relates to voltage control measures already employed by Ameren Missouri be included. Voltage control measures already employed by Ameren Missouri involve reducing load tap changer (LTC) voltage setpoints at the time of system peak and can be applied for short durations. Voltage Control Pilot, on the other hand, would test the possibility of reducing energy consumption without exceeding allowable voltage limits for longer durations, which cannot be done by reducing LTC setpoints. More explanation has been added to Chapter 7.
- vi. Staff requested that the estimated start time for transmission and distribution projects be added to summary tables. The estimated start time has been so added.

11.3.2 Comments of Sierra Club and NRDC

Sierra Club and NRDC jointly provided written comments on May 14, 2014. Following are the comments provided by Sierra Club and NRDC and Ameren Missouri's review of each, as well as an indication of any discussion included in our filing to address each comment.

- A. Sierra Club and NRDC expressed a concern with respect to comparisons of supply side and demand side resources on a levelized cost of energy (LCOE) basis.***

Review and Application – Ameren Missouri has included LCOE charts including both demand side and supply side resources in Chapters 1 and 9.

- B. Sierra Club and NRDC expressed concern with the number of alternative resource plans including Maximum Achievable Potential (MAP) DSM portfolios compared to the number of alternative resource plans including Realistic Achievable Potential DSM portfolios.***

Review and Application – Ameren Missouri has included additional alternative resource plans that include MAP DSM portfolios and has discussed the rationale used for its development of alternative resource plans in Chapter 9.

- C. Sierra Club and NRDC expressed concerns regarding the estimated potential for demand side resource resulting from Ameren Missouri's DSM Potential Study.***

Review and Application – Ameren Missouri has conducted its DSM Potential Study with the assistance of expert external consulting firms, as described in Chapter 8. Ameren Missouri also conducted a rigorous stakeholder process throughout the development of its DSM Potential Study to solicit, consider, and incorporate (as appropriate) stakeholder comments and input regarding the assumptions and methods used in estimating DSM potential.

- D. Sierra Club and NRDC provided comments on Chapter 3 – Load Analysis and Forecasting. The comments and Ameren Missouri's review and application of each are summarized and discussed together for each comment below.***

Review and Application

- i. Sierra Club and NRDC requested additional information regarding the planning scenarios developed and used by Ameren Missouri to evaluate alternative resource plans. A complete discussion of scenario assumptions, modeling and results is included in Chapter 2.
- ii. Sierra Club and NRDC requested a definition for “Peak Demand Uncertainty.” Chapter 3 includes a discussion of the range of peak demand forecasted based on the scenarios described in Chapter 2. The Peak Demand Uncertainty described is simply the difference between the highest and lowest peak demand forecasts based on those scenarios.
- iii. Sierra Club and NRDC requested that any secondary sources used to develop demand side potential be listed. Ameren Missouri has included references to secondary sources in Volume 3 (page 2-14) of its DSM Potential Study, which is presented as an appendix to Chapter 8.

- iv. Sierra Club and NRDC requested an explanation regarding why natural gas prices were excluded from final load forecast model specifications used to generate energy forecasts. A discussion and explanation of the consideration of natural gas prices is included in Chapter 3.
- v. Sierra Club and NRDC asked if the statement, “[a]ll future DSM impacts beyond the first 3-year MEEIA cycle are excluded from the base forecast and are the subject of the DSM chapter of this IRP,” means that Ameren (Missouri) does not expect its current portfolio of DSM programs to continue. It does not mean that. Rather, the statement simply means that only the load impacts of the current 3-year portfolio are included in our base load forecasts and that the effects of new or continued DSM programs are included in our planning analysis separately and in accordance with the assumptions and conclusions discussed in Chapter 8.
- vi. Sierra Club and NRDC posed questions regarding the pace of employment of distributed solar generation. Ameren Missouri has included a discussion of distributed solar generation in Chapter 3 and an analysis of a higher level of distributed solar deployment in Chapter 10.
- vii. Sierra Club and NRDC expressed concern with the treatment of off-system sales as sensitivity. Ameren Missouri has included a discussion of its scenario development, modeling and conclusions in Chapter 2. These scenarios were used for analysis discussed in Chapters 9 and 10. Forecasts of off-system sales were developed as part of the modeling. The analysis of every alternative resource plan includes the use of 15 unique forecasts for off-system sales corresponding to the scenarios described in Chapter 2.
- viii. Sierra Club and NRDC pose questions regarding Ameren Missouri’s consideration of specific transmission projects for purposes of acquiring renewable energy resources. Ameren Missouri has included a discussion of RES requirements in Chapter 2, a discussion of transmission considerations in Chapter 7, and a discussion of RES compliance in Chapter 9.

E. Sierra Club and NRDC provided comments on Chapter 4 – Existing Supply Side Resources. The comments and Ameren Missouri’s review and application of each are summarized and discussed together for each comment below.

Review and Application

- i. Sierra Club and NRDC requested a copy of a condition assessment study of Ameren Missouri’s Meramec Energy Center performed by Burns &

- McDonnell. Ameren Missouri has included a copy of the study report in its work papers.
- ii. Sierra Club and NRDC requested a copy of a study of coal-fired power plant life expectancy performed by Black & Veatch. Ameren Missouri has included a copy of the study report in its work papers.
 - iii. Sierra Club and NRDC ask whether Ameren Missouri has included analysis of replacement of Meramec Energy center with DSM, renewables, storage or some combination. Ameren Missouri has included such options as part of its alternative resource plans, discussed in Chapter 9.
 - iv. Sierra Club and NRDC requested that information be included in Ameren Missouri's IRP Filing regarding the extent to which (alternative) resource plans rely on off-system sales. Ameren Missouri has included this information as part of its modeling and work papers.

F. Sierra Club and NRDC provided comments on Chapter 5 – Environmental Compliance. The comments and Ameren Missouri's review and application of each are summarized and discussed together for each comment below.

Review and Application

- i. Sierra Club and NRDC requested that Ameren Missouri include an analysis of compliance with proposed regulations of greenhouse gases under section 111(d) of the Clean Air Act. Ameren Missouri has included analysis and discussion of the regulations proposed by the U.S. Environmental Protection Agency (EPA) on June 2, 2014, in Chapter 10.
- ii. Sierra Club and NRDC posed specific questions regarding Ameren Missouri's assumptions with respect to compliance with environmental regulations. Rather than recite each question, we provide the answers as follows. Ameren Missouri has in fact assumed that operation of Rush Island can continue during the planning period (2015-2034) without the installation of a scrubber. Ameren Missouri has considered whether additional control equipment would be needed for each of its coal-fired energy centers to comply with future NAAQS requirements for ozone and particulate matter. Ameren Missouri has not simply assumed that plants are economical to run after the installation of any pollution control equipment, but has rather included assumptions for control equipment and performed economic analysis based on those assumptions as described in Chapter 9. Ameren Missouri's basis for assumptions regarding installation of scrubbers is included in Chapter 5. Details regarding specific processes used for wastewater treatment underlie our

assumptions but are not discussed in Chapter 5 due to the uncertain nature of the regulations at this time.

G. Sierra Club and NRDC provided comments on Chapter 6 – New Supply Side Resources. The comments and Ameren Missouri’s review and application of each are summarized and discussed together for each comment below.

Review and Application

- i. Sierra Club and NRDC included an editorial comment regarding the cost-effectiveness of certain resources, which does not require a response.
- ii. Sierra Club and NRDC requested a copy of a study of wind project siting and costs performed by Black and Veatch. Ameren Missouri has included a copy of the study report in its work papers.
- iii. Sierra Club and NRDC asked whether Ameren Missouri has evaluated whether the cost of purchasing wind through PPA’s is below the avoided cost of energy generated from its existing supply-side resources. Ameren Missouri has not identified any specific wind PPA opportunities as part of its IRP analysis. We have estimated the LCOE of our existing coal-fired resources to be below the LCOE for new wind resources.

11.4 Special Contemporary Issues

Pursuant to its rules on Integrated Resource Planning, the Commission on October 23, 2013, issued an order establishing Special Contemporary Resource Planning Issues (Special Contemporary Issues) for Ameren Missouri to analyze and document as part of its 2014 triennial IRP filing. Following is a restatement of the Special Contemporary Issues included in the Commission’s order and a brief discussion of Ameren Missouri’s approach to analyzing and documenting its consideration of each issue and where in its triennial filing more detailed information can be found.

A. Describe and document the process Ameren Missouri used to quantify all cost-effective demand-side savings in its upcoming, October 1, 2014, triennial compliance filing;

Ameren Missouri’s Approach – Ameren Missouri evaluated the goal of all cost-effective demand-side savings, as embodied in MEEIA, by analyzing multiple DSM portfolios as part of its alternative resources plans and by performing more detailed analysis of the costs and benefits of DSM portfolios, including shorter-term impacts on customer costs and rates. A full discussion of our consideration of the goal of all cost-effective demand-side savings is included in Chapter 10.

- B. Describe and document the quantification of all cost-effective demand-side savings for Ameren Missouri in its upcoming, October 1, 2014, triennial compliance filing;***

Ameren Missouri's Approach – As described above, a full discussion of our consideration of the goal of all cost-effective demand-side savings is included in Chapter 10.

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

Ameren Missouri's Approach – As described above, a full discussion of our consideration of the goal of all cost-effective demand-side savings is included in Chapter 10.

- D. Describe and document generally Ameren Missouri's plans and timing to replace the Ventyx Midas® model currently used to perform its integrated resource planning and risk analysis required in 4 CSR 240-22.060;***

Ameren Missouri's Approach – A discussion of model replacement and future plans is included in Chapter 9.

- E. Describe and document generally Ameren Missouri's plans and timing to work collaboratively with Staff, the Office of Public Counsel, and other parties to consider the possible transition – over time – to a common software platform to perform the analysis required by 4 CSR 240-22.060;***

Ameren Missouri's Approach – A discussion of model replacement and future plans is included in Chapter 9.

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

Ameren Missouri's Approach – Ameren Missouri included consideration of distributed generation, DSM programs and CHP in collaboration with municipal, agricultural and/or industrial processes with on-site electric and thermal load requirements as part of its DSM Potential Study. Chapter 8 includes a discussion of these considerations and the DSM Potential Study report is included in our filing as an appendix to Chapter 8.

G. Document for use in economic modeling and resource planning low, base, and high projections for natural gas prices, CO₂ prices, and coal prices, to the extent it is not already included in the 2014 IRP filing.

Ameren Missouri's Approach – Ameren Missouri developed low, base, and high assumptions natural gas prices, CO₂ prices, and coal prices as part of its previously established approach to evaluating candidate uncertain factors. A discussion of the development of these and other assumptions is included in Chapter 2, and the results of modeling using these assumptions is presented in Chapter 9.

H. Analyze and document the future capital and operating costs faced by each Ameren Missouri coal-fired generating unit in order to comply with the following environmental standards:

- 1) Clean Air Act New Source Review provisions;
- 2) 1-hour Sulfur Dioxide National Ambient Air Quality Standards'
- 3) National Ambient Air Quality Standards for ozone and fine particulate matter;
- 4) Cross-State Air Pollution Rule, in the event that the rule is reinstated;
- 5) Clean Air Interstate Rule;
- 6) Mercury and Air Toxics Standards;
- 7) Clean Water Act Section 316(b) Cooling Water Intake Standards;
- 8) Clean Water Act Steam Electric Effluent Limitation Guidelines;
- 9) Coal Combustion Waste rules;
- 10) Clean Air Act Section 111(d) Greenhouse Gas standards for existing sources; and
- 11) Clean Air Act Regional Haze requirements

Ameren Missouri's Approach – Ameren Missouri has included as a separate chapter a discussion of environmental regulations, including all those listed above, and our assumptions for compliance with those regulations. A full discussion of environmental regulations and compliance assumptions is presented in Chapter 5.

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

Ameren Missouri's Approach – Ameren Missouri has developed specific assumptions for transmission system projects that may be necessary due to the retirement of any of its existing coal-fired energy centers. A discussion of the assumptions and methods used in developing them is included in Chapter 7.

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

Ameren Missouri's Approach – Ameren Missouri has included consideration of foreseeable emerging energy efficiency technologies in the development of its DSM Potential Study and DSM portfolio assumptions used in the development of alternative resource plans. Our DSM portfolio assumptions are discussed in Chapter 8, and the DSM Potential Study is included as an appendix to Chapter 8.

11.5 Post-Filing Activities

To assist stakeholder in the review of Ameren Missouri's IRP filing, Ameren Missouri plans to host a workshop in the fourth quarter of 2014 to provide an overview of the filing and to answer questions stakeholders may have after having had time to begin reviewing the filing. Ameren Missouri will work with stakeholders to ensure understanding of the assumptions, analyses, conclusions and decisions presented in its IRP filing.