

#### 4 CSR 240-22.060 Integrated Resource Analysis

PURPOSE: 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 for the logically consistent and economically equivalent analysis of alternative resource plans.

(1) Resource Planning Objectives. The utility shall design alternative resource plans to satisfy at least the objectives and priorities identified in 4 CSR 240-22.010(2). The utility may identify additional planning objectives that alternative resource plans will be designed to ~~meet~~serve.

(2) Specification of Performance Measures. The utility shall specify a set of quantitative measures for assessing the performance of alternative resource plans with respect to identified planning objectives.

(A) These performance measures shall include at least the following:

1. ~~P~~Present worth of utility revenue requirements;
2. ~~P~~Present worth of probable environmental costs;
3. ~~P~~Present worth of out-of-pocket costs to participants in demand-side programs;
4. ~~L~~Levelized annual average rates; and
5. ~~M~~Maximum single-year increase in annual average rates; and
6. Other measures that utility decision-makers believe are appropriate for assessing the performance of resource plans relative to the planning objectives identified in 4 CSR 240-22.010(2).

(B) All present worth and levelization calculations shall use the utility discount rate, which the utility will identify as a percent, and all costs and benefits shall be expressed in nominal dollars. ~~Utility decision-makers may also specify other measures that they believe are appropriate for assessing the performance of resource plans relative to the planning objectives identified in 4 CSR 240-22.010(2).~~

(3) Development of Alternative Resource Plans. The utility shall use appropriate combinations of candidate demand-side and supply-side resources to develop a set of alternative resource plans, each of which is designed to achieve one (1) or more of the planning objectives identified in 4 CSR 240-22.010(2).

(A) The electric utility shall develop at least the following alternative resource plans:

1. An alternative resource plan based on the policy assumption that the public interest is served by minimizing the long run utility cost, including probable environmental costs. This alternative resource plan would not necessarily be consistent with current state energy policy, but would be a benchmark for costs against which to compare other plans. This resource plan will be considered the benchmark plan;

2. An alternative resource plan based on the policy preference for renewable energy resources. This plan would meet the renewable energy standards as set forth in 4 CSR 240-20.XXX(2) in the lowest cost manner;

3. An alternative resource plan based on the policy preference for encouraging electric corporations to develop and administer energy efficiency initiatives that reduce the annual growth in energy consumption and the need to build additional electric generation capacity and to implement demand side programs with a goal of achieving all cost-effective demand-side savings. This plan would assess the cost of expanding demand-side programs in the lowest cost manner above the levels of energy efficiency already contained in the benchmark plan. The minimum target level of demand side programs for this alternative resource plan shall be, at a minimum, sufficient to achieve the larger of:

A. A reduction each year equal to at least one-half of one percent (0.5%) of the average annual utility peak demand and of the average annual utility energy usage of the prior three (3) years;

B. A reduction in peak load or energy specified by the staff as a special contemporary issue pursuant to 4 CSR 240-22.080(4).

C. A reduction in peak load or energy specified by commission order. This order may be from cases other than the Chapter 22 compliance filing case.

4. An alternative resource plan based on the implementation of smart grid technology. The smart grid alternative resource plan shall assume that the utility will make no new non-advanced transmission and distribution grid investments, and that the existing transmission and distribution grids are upgraded to smart grid capabilities by 2020;

5. An alternative resource plan which optimizes the cost while meeting mandated renewable energy requirements, mandated energy efficiency goals, and mandated emissions goals; and

6. Any additional alternative resource plans that the utility deems should be analyzed in order to determine the least-cost alternative resource plans specified above.

(B) The alternative resource plans developed at this stage of the analysis shall not include load-building programs, which shall be analyzed as required by section (5) of this rule;

(C) The utility shall include in its development of alternative resource plans the impact of:

1. The retirement of existing generation plants;

2. The addition of equipment on generation plants to meet environmental requirements; and

3. The conclusion of any currently implemented demand-side resources.

(4) Analysis of Alternative Resource Plans. The utility shall assess the relative performance of the alternative resource plans by calculating for each plan the value of each performance measure specified pursuant to section (2). This calculation shall assume values for uncertain factors that are judged by utility decision-makers to be most likely. The analysis shall cover a planning horizon of at least twenty (20) years and shall be carried out with computer models that are capable of simulating the total operation of the system on a year-by-year basis in order to assess the cumulative impacts of alternative resource plans. These models shall be sufficiently detailed to accomplish the following tasks and objectives:

(A) The financial impact of alternative resource plans shall be modeled in sufficient detail to provide comparative estimates of at least the following measures of the utility's financial condition for each year of the planning horizon: ratio of funds flow from operations (FFO) ~~pre-tax~~ interest coverage, ratio of FFO to average total debt (average total debt for two years), ratio of total debt to total capital, and ratio of net cash flow to capital expenditures;

(B) The modeling procedure shall be based on the assumption that rates will be adjusted annually, in a manner that is consistent with Missouri law. This provision does not imply any requirement for the utility to file actual rate cases or for the commission to accord any particular ratemaking treatment to actual costs incurred by the utility;

(C) The modeling procedure shall include a method to ensure that the impact of changes in electric rates on future levels of demand for electric service is accounted for in the analysis; and

(D) The modeling procedure shall treat supply-side and demand-side resources on a logically consistent and economically equivalent basis and in a manner consistent with Missouri law. This means that the same types or categories of costs, benefits and risks shall be considered, and that these factors shall be quantified at a similar level of detail and precision for all resource types.

(5) Analysis of Load-Building Programs. If the utility intends to continue existing load-building programs or implement new ones, it shall analyze these programs in the context of one (1) or more of the alternative plans developed pursuant to section (3) of this rule, including the preferred resource plan selected pursuant to 4 CSR 240-22.070(6). This analysis shall use the same modeling procedure and assumptions described in section (4) and shall include the following elements:

(A) Estimation of the impact of load-building programs on the electric utility's summer and winter peak demands and energy usage;

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

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

(D) An assessment of any other aspects of the proposed load-building programs that affect the public interest.

(6) Reporting Requirements. To demonstrate compliance with the provisions of this rule, and pursuant to the requirements of 4 CSR 240-22.080, the utility shall prepare a report that contains at least the following information:

(A) A description of each alternative resource plan including the type and size of each resource addition and a listing of the sequence and schedule for retiring existing resources and acquiring each new resource addition;

(B) A summary tabulation that shows the performance of each alternative resource plan as measured by each of the measures specified in section (2) of this rule;

(C) For each alternative resource plan, a plot of each of the following over the planning horizon along with a table containing the data used to create the plot:

1. The combined impact of all demand-side resources on the base-case forecast of summer and winter peak demands;

2. The composition, by program, of the capacity provided by demand-side resources;

3. The composition, by supply resource, of the capacity (including reserve margin) provided by supply resources. Existing supply-side resources may be shown as a single resource;

4. The combined impact of all demand-side resources on the base-case forecast of annual energy requirements;

5. The composition, by program, of the annual energy provided by demand-side resources;

6. The composition, by supply resource, of the annual energy (including losses) provided by supply resources. Existing supply-side resources may be shown as a single resource;

7. The values of the ~~fourth~~ (43) measures of financial condition identified in subsection (4) (A);

8. Annual average rates;

9. Annual emissions of each environmental pollutant identified pursuant to 4 CSR 240-22.040(2) (B) 1; ~~and~~

10. Annual probable environmental costs; ~~and~~

11. Public and highly confidential forms of the capacity balance spreadsheets completed in the specified format.

(D) A discussion of how the impacts of rate changes on future electric loads were modeled and how the appropriate estimates of price elasticity were obtained;

(E) A discussion of the incremental costs of fully complying with the renewable energy standards;

(F) A discussion of the incremental costs of implementing expanded energy efficiency initiatives sufficient to meet the goals specified in subsection (3)(A) 3;

(G) A description of the computer models used in the analysis of alternative resource plans; and

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

1. Annual average rates with and without the load-building programs; and
2. Annual utility costs and probable environmental costs with and without the load-building programs.

AUTHORITY: sections 386.040, 386.610 and 393.140, RSMo 1986 and 386.250, RSMo Supp. 1991.\* Original rule filed June 12, 1992, effective May 6, 1993.

\*Original authority: 386.040, RSMo 1939; 386.250, RSMo 1939, amended 1963, 1967, 1977, 1980, 1987, 1988, 1991; 386.610, RSMo 1939; and 393.140, RSMo 1939, amended 1949, 1967. Add RES, DSM authorities