

CHAPTER 35
ENERGY EFFICIENCY PLANNING AND COST REVIEW

199—35.1(476) Policy and purpose. The board deems the implementation of effective energy efficiency plans by utilities and the opportunity of the utilities' customers to participate in and benefit from the energy efficiency plans to be of the highest priority.

These rules are intended to implement Iowa Code sections 476.1, 476.6(17, 19-21), and 476.10A, for gas and electric utilities required by statute to be rate-regulated and to provide the board the necessary information to review each utility's assessment of potential, to develop specific capacity and energy savings performance standards for each utility and to evaluate the appropriateness of each utility's energy efficiency plan.

199—35.2(476) Definitions. The following words and terms, when used in this chapter, shall have the meanings shown below:

"After-tax discount rate" means the utility's weighted cost of capital reduced by the utility's composite federal and state income tax rate multiplied by the utility's weighted cost of debt.

"Assessment of potential" means development of energy and capacity savings available from actual and projected customer usage by cost-effectively applying commercially available technology and improved operating practices to energy-using equipment and buildings and considering market factors including, but not limited to, the effects of rate impacts, the need to capture lost opportunities, the nonenergy benefits of measures, uncertainty associated with industry restructuring, the strategic value of energy efficiency to the utility, and other market factors.

"Avoided cost" means the cost the utility would have to pay to provide energy and capacity from alternative sources of supply available to utilities as calculated pursuant to the formulas in subrules 35.9(7) and 35.10(4).

"Benefit/cost ratio" means the ratio of the present value of benefits to the present value of costs.

"Benefit/cost tests" means one of the four acceptable economic tests used to compare the present value of applicable benefits to the present value of applicable costs of an energy efficiency program or plan. The tests are the participant test, the ratepayer impact test, the societal test, and the utility cost test. A program or plan passes a benefit/cost test if the benefit/cost ratio is equal to or greater than one.

"Capacity purchase" or *"sale commitment"* means electric generating capacity which a utility has committed to purchase or sell by means of contracts or other enforceable agreements.

"Contract deliverability" means the maximum firm capacity which a utility has under contract with its suppliers.

"Customer incentive" means an amount or amounts provided to or on behalf of customers for the purpose of having customers participate in energy efficiency programs. Incentives include, but are not limited to, rebates, loan subsidies, payments to dealers, rate credits, bill credits, the cost of energy audits, the cost of equipment given to customers, and the cost of installing such equipment. Customer incentives do not include the cost of information provided by the utility, nor do they include customers' bill reductions associated with reduced energy usage due to the implementation of energy efficiency programs. For the purposes of energy efficiency pricing strategies, incentive means the difference between a customer's bill on an energy efficiency customized rate and the customer's bill on a traditional rate considering factors such as the elasticity of demand.

"Customer persistence" means a customer's consistent use of energy efficient equipment or operating practices over time. For example, a nonpersistent customer may initially adopt the use of compact fluorescent lights, but replace efficient lights with incandescent lights when the former wear out. By contrast, a persistent customer will replace burned out efficient lamps with energy saving lamps after the initial trial.

"Customer's side of the meter" means point of delivery. For reference, the utility's side of the meter refers to activities from and including generation or energy supply up to the point where the customer takes delivery, which may be the customer's billing meter or an unmeted fixture.

“Economic potential” means the energy and capacity savings that result in future years when measures are adopted or applied by customers at the time it is economical to do so. For purposes of this chapter, economic potential may be determined by comparing the utility’s avoided cost savings to the incremental cost of the measure.

“Energy efficiency measures” means activities on the customers’ side of the meter which reduce customers’ energy use or demand including, but not limited to, end-use efficiency improvements; load control or load management; thermal energy storage; or pricing strategies.

“Energy savings performance standards” means those standards which shall be cost-effectively achieved, with the exception of low-income weatherization and tree planting programs, and includes the annual capacity savings stated in either kW or dth/day or Mcf/day and the annual energy savings stated in either kWh or dth or Mcf.

“Firm throughput” means firm sales of gas and gas transported over the utility’s distribution facilities under firm transportation arrangements.

“Fixed operations and maintenance costs” means operations and maintenance costs which do not vary with changes in energy generation or supply.

“Free riders” means those program participants who would have done what an energy efficiency program intends to promote even without the program.

“Gross operating revenues” means all revenues from intrastate operations includable in the operating revenue accounts of the prescribed uniform system of accounts except:

1. Provisions for uncollectible revenues;
2. Amounts included in the accounts for interdepartmental sales and rents;
3. Wholesale revenue;
4. Revenues from the sale of natural gas used as a feedstock by customers; and
5. Revenues from the sale of transportation service.

“Incremental cost” means the difference in the customer’s cost between a less energy efficient measure and a more energy efficient measure.

“Marginal energy cost” for a gas utility means the cost associated with supplying the next thousand cubic feet (Mcf) or dekatherm (dth) of gas.

“Marginal energy cost” for an electric utility means the energy or fuel cost associated with generating or purchasing the next kWh of electricity.

“Market barrier” means a real or perceived impediment to the adoption of energy efficient technologies or energy efficient behavior by consumers.

“Net societal benefits” means the present value of benefits less the present value of costs as defined in the societal test.

“Off-peak period” means the days and weeks not included in the gas utility’s peak period.

“Participant test” means an economic test used to compare the present value of benefits to the present value of costs over the useful life of an energy efficiency measure or program from the participant’s perspective. Present values are calculated using a discount rate appropriate to the class of customers to which the energy efficiency measure or program is targeted. Benefits are the sum of the present values of the customers’ bill reductions, tax credits, and customer incentives for each year of the useful life of an energy efficient measure or program. Costs are the sum of present values of the customer participation costs (including initial capital costs, ongoing operations and maintenance costs, removal costs less a salvage value of existing equipment, and the value of the customer’s time in arranging installation, if significant) and any resulting bill increases for each year of the useful life of the measure or program. The calculation of bill increases and decreases must account for any time-differentiated rates to the customer or class of customers being analyzed.

“Peak day demand” means the amount of natural gas required to meet firm customers’ maximum daily consumption.

“Peak period” for a gas utility means the days and weeks when the gas utility’s highest firm throughput is likely to occur.

“Phase-in technical potential” means the technical potential for energy and capacity savings from the adoption of commercially available technology and operating practices when existing equipment is

replaced or new equipment is installed. For example, if an energy-using unit of equipment has a ten-year lifetime, the phase-in technical potential in any one year might be one-tenth of the total number of such units in existence plus units projected to be installed.

“Process-oriented industrial assessment” means an analysis which promotes the adoption of energy efficiency measures by examining the facilities, operations and equipment of an industrial customer in which energy efficiency opportunities may be embedded and which includes:

1. The identification of opportunities which may provide increased energy efficiency in an industrial customer’s production process from the introduction of materials to the final packaging of the product for shipping by:

- Directly improving the efficiency or scheduling of energy use;
- Reducing environmental waste; and
- Technological improvements designed to increase competitiveness and to achieve cost-effective product quality enhancement;

2. The identification of opportunities for an industrial customer to improve the energy efficiency of lighting, heating, ventilation, air conditioning, and the associated building envelope;

3. The identification of cost-effective opportunities for using renewable energy technology in “1” and “2” above.

“Program delivery and support mechanisms” means methods used by the utility to promote the adoption of energy efficiency options by customers. Program delivery and support mechanisms may include but are not limited to informational, educational, or demonstration techniques, technical assistance, or energy audits. Program delivery and support mechanisms may target specific options and markets, or address a variety of options across any number of energy efficiency programs.

“Purchased gas adjustment (PGA) year” means the 12-month period beginning September 1 and ending August 31.

“Ratepayer impact measure test” means an economic test used to compare the present value of the benefits to the present value of the costs over the useful life of an energy efficiency measure or program from a rate level or utility bill perspective. Present values are calculated using the utility’s discount rate. Benefits are the sum of the present values of utility avoided capacity and energy costs (excluding the externality factor) and any revenue gains due to the energy efficiency measures for each year of the useful life of the measure or program. Costs are the sum of the present values of utility increased supply costs, revenue losses due to the energy efficiency measures, utility program costs, and customer incentives for each year of the useful life of the measure or program. The calculation of utility avoided capacity and energy, increased utility supply costs, and revenue gains and losses must use the utility costing periods.

“Revenue requirement per net kW per year” for an electric utility means an annual cost amount calculated by the economic carrying charge for each year of the supply option’s life such that when each annual amount is discounted by the utility’s after-tax discount rate the sum of the discounted amounts equals the supply option’s capital cost inclusive of income taxes on the return.

“Saturation” or *“market saturation”* means a comparison (using fractions or percentages) of the number of units of a particular type of equipment or building component to the total number of units in use which perform the particular function under study.

“Seasonal peak demand” for an electric utility means the maximum hourly demand that occurred during that season.

“Sensitivity analysis” means a set of evaluation methods or procedures which provides an estimation of the sensitivity of final results to changes in particular input data or assumptions.

“Societal test” means an economic test used to compare the present value of the benefits to the present value of the costs over the useful life of an energy efficiency measure or program from a societal perspective. Present values are calculated using a 12-month average of the 10-year and 30-year Treasury Bond rate as the discount rate. The average shall be calculated using the most recent 12 months at the time the utility calculates its benefit/cost tests for its energy efficiency plan in subrule 35.8(6). Benefits are the sum of the present values of the utility avoided supply and energy costs including the effects of externalities. Costs are the sum of the present values of utility program costs (excluding customer

incentives), participant costs, and any increased utility supply costs for each year of the useful life of the measure or program. The calculation of utility avoided capacity and energy and increased utility supply costs must use the utility costing periods.

“System energy losses” for an electric utility means net energy which is generated, purchased, or interchanged by a utility but which is not delivered either to ultimate customers or used for interdepartmental sales expressed as a percentage of net energy.

“Take-back effect” means a tendency to increase energy use in a facility, or for an appliance, as a result of increased efficiency of energy use. For example, a customer’s installation of high efficiency light bulbs and then operating the lights longer, constitutes “taking-back” some of the energy otherwise saved by the efficient lighting.

“Target market” means a group of energy users who are the intended participants in an energy efficiency program.

“Technical potential” means the demand and energy savings which could occur if every existing piece of equipment or operating practice were changed to a technically feasible level of energy efficiency.

“Technically viable” means that a measure is appropriate for customers’ equipment and buildings and Iowa’s climatic conditions.

“Total throughput” means all volumes of natural gas flowing through the utility’s distribution system.

“Transportation volume” means the volume of natural gas flowing through the utility’s distribution system which is not owned or sold by the utility.

“Useful life” means the number of years an energy efficiency measure will produce benefits.

“Utility cost test” means an economic test used to compare the present value of the benefits to the present value of the costs over the useful life of an energy efficiency measure or program from the utility revenue requirement perspective. Present values are calculated using the utility’s discount rate. Benefits are the sum of the present values of each year’s utility avoided capacity and energy costs (excluding the externality factor) over the useful life of the measure or program. Costs are the sum of the present values of the utility’s program costs, customer incentives, and any increased utility supply costs for each year of the useful life of the measure or program. The calculation of utility avoided capacity and energy and increased utility supply costs must use the utility costing periods.

“Variable operations and maintenance costs” means operations and maintenance costs which vary with the amount of energy generated or supplied.

199—35.3(476) Applicability. Each gas or electric utility required by statute to be rate-regulated shall file an assessment of potential energy and capacity savings and an energy efficiency plan which shall include economically achievable programs designed to attain the performance standards developed by the board. Combination electric and gas utilities may file combined assessments of potential and energy efficiency plans. Combined plans shall specify which energy efficiency programs are attributable to the electric operation, which are attributable to the natural gas operation, and which are attributable to both. If a combination utility files separate plans, the board may consolidate the plans for purposes of review and hearing. The board will conduct a contested case proceeding for the purpose of (1) developing specific capacity and energy savings performance standards for each utility and (2) reviewing energy efficiency plans and budgets designed to achieve those savings.

199—35.4(476) Schedule of filings.

35.4(1) The board will schedule each utility’s filing of an assessment of potential and energy efficiency plan and each utility’s prudence review proceeding by order.

35.4(2) Initial cost recovery proceedings. Rescinded IAB 4/28/93, effective 6/2/93.

35.4(3) Subsequent biennial filings. Rescinded IAB 4/28/93, effective 6/2/93.

35.4(4) Written notice of assessment of potential and energy efficiency plan. No more than 62 days prior to and prior to filing its assessment of potential and energy efficiency plan, a utility shall mail or deliver a written notice of its filing to all affected customers. The notice shall be submitted to the board

for approval not less than 30 days prior to proposed notification of customers. The notice shall, at a minimum, include the following elements:

- a.* A statement that the utility will be filing an assessment of potential and energy efficiency plan with the board;
- b.* A brief identification of the proposed energy efficiency programs and the estimated annual cost of the proposed energy efficiency programs during the five-year budget time frame;
- c.* The estimated annual rate and bills impacts of the proposed energy efficiency programs on each class of customer; and the estimated annual jurisdictional rate impact for each major customer grouping in dollars and as a percent, with the proposed actual increases to be filed at the time of notice to customers;
- d.* A statement that the board will be conducting a contested case proceeding to review the application and that a customer may file a written objection and request a consumer comment hearing; and
- e.* The telephone numbers and addresses of utility personnel, the board and the consumer advocate, for the customer to contact with questions.

199—35.5(476) Required programs. Rescinded IAB 1/13/99, effective 2/17/99.

199—35.6(476) Procedures. The following procedures shall govern the board's determination of performance standards and review of energy efficiency plans:

35.6(1) Collaboration. A utility shall offer interested persons the opportunity to participate in the development of its energy efficiency plan. At a minimum, a utility shall provide the opportunity to offer suggestions for programs and for the assessment of potential and to review and comment on a draft of the assessment of potential and energy efficiency plan proposed to be submitted by the utility. The utility may analyze proposals from participants to help determine the effects of the proposals on its plan. A participant shall have the responsibility to provide sufficient data to enable the utility to analyze the participant's proposal. The opportunity to participate shall commence at least 180 days prior to the date the utility submits its assessment of potential and plan to the board.

35.6(2) Contested case proceeding. Within 30 days after filing, each application for approval of an assessment of potential and accompanying energy efficiency plan which meets the requirements of this chapter shall be docketed as a contested case proceeding. All testimony, exhibits, and work papers shall be filed with each application for approval of an assessment of potential and energy efficiency plan. The energy bureau of the division of energy and geological resources of the Iowa department of natural resources shall be considered a party to the proceeding. Any portion of any plan, application, testimony, exhibit, or work paper which is based upon or derived from a computer program shall include as a filing requirement the name and description of the computer program, and a disk and a hard copy of all reasonably necessary data inputs and all reasonably necessary program outputs associated with each such portion. One copy of the computer information will be filed with the board, one copy of this information will be provided to the energy bureau of the division of energy and geological resources of the Iowa department of natural resources, and one copy of this information will be provided to the consumer advocate. Further copies shall be provided by the utility upon request by the board or the consumer advocate. The proceeding shall follow the applicable provisions of 199 IAC Chapter 7.

35.6(3) Review of proposals offered by third parties. The consumer advocate or a third-party intervenor may propose approval, modification, or rejection of a utility's assessment of potential and accompanying energy efficiency plan. All testimony, exhibits, and work papers shall be filed with any proposal. The testimony, exhibits, and work papers of the consumer advocate or a third-party intervenor shall include, if applicable:

- a.* An analysis showing why rejection of the proposed utility assessment of potential and plan is appropriate;
- b.* A statement of any proposed modification or alternate plan and why approval is appropriate;
- c.* An estimated implementation schedule for any modification or alternate plan; and
- d.* A statement of the projected costs and benefits and benefit/cost test results as a result of any modification or alternate plan and the amount of difference from the utility's projected costs and benefits.

35.6(4) *Modification after implementation.* An approved energy efficiency plan and budget may be modified during implementation if the modification is approved by the board. The consumer advocate or the utility may file either a separate or joint application for modification. The board, on its own motion, may consider modification of the energy efficiency plan and budget.

a. The utility shall file an application to modify if any one of the following conditions occurs or is projected to occur during the current or subsequent calendar year of implementation of its plan:

(1) The total annual plan budget has changed or will change by a factor of at least plus or minus 5 percent;

(2) The budget per customer class or grouping has changed or will change by a factor of at least plus or minus 10 percent;

(3) An approved program is eliminated or a new program is added.

b. All applications to modify shall be filed in the same docket in which the energy efficiency plan was approved. All parties to the docket in which the energy efficiency plan was approved shall be served copies of the application to modify and shall have 14 days to file their objection or agreement. Failure to file timely objection shall be deemed agreement.

c. Each application to modify an approved energy efficiency plan shall include:

(1) A statement of the proposed modification and the party's interest in the modification;

(2) An analysis supporting the requested modification;

(3) An estimated implementation schedule for the modification; and

(4) A statement of the effect of the modification on attainment of the utility's performance standards and on projected results of the utility's implementation of its plan.

d. If the board finds that reasonable grounds exist to investigate the proposed modification, a procedural schedule shall be set within 30 days after the application is filed.

e. If an application to modify is filed and the board finds that there is no reason to investigate, then the board shall issue an order stating the reasons for the board's decision relating to the application.

f. If the board rejects or modifies a utility's plan, the board may require the utility to file a modified plan and may specify the minimum acceptable contents of the modified plan.

199—35.7(476) Waivers. Upon request and for good cause shown, the board may waive any energy efficiency plan requirement. If the waiver request is granted, a copy of the board order shall be filed with the energy efficiency plan.

199—35.8(476) Assessment of potential and energy efficiency plan requirements. A utility's plan shall include a range of programs which address all customer classes across its Iowa jurisdictional territory. At a minimum, the plan shall include a program for qualified lower-income residential customers, including a cooperative program with any community action agency within the utility's service area. The utility shall consider including in its plan a program for tree planting. Advertising which is part of an approved energy efficiency program is deemed to be advertising required by the board for purposes of Iowa Code section 476.18(3). The utility's assessment of potential and energy efficiency plan shall include a summary not to exceed five pages in length written in a nontechnical style for the benefit of the general public. Each utility's assessment of potential and accompanying energy efficiency plan shall include the following:

35.8(1) *Assessment of potential and determination of performance standards.* The utility shall file with the board an assessment of the potential for energy and capacity savings available from actual and projected customer usage by applying commercially available technology and improved operating practices to energy-using equipment and buildings. The utility's assessment shall address the potential energy and capacity savings in each of ten years subsequent to the year the assessment is filed. Economic and impact analyses of measures shall address benefits and costs over the entire estimated lives of energy efficiency measures. At a minimum, each utility's assessment of potential shall include data and analyses as follows:

a. A base case survey projecting annual peak demand and energy use of customers' existing and estimated new energy-using buildings and equipment. The base case survey shall identify the annual

peak demand and energy savings projected to occur from customers' adoption of measures in the absence of new or continued demand-side management programs by the utility.

b. A survey to identify and describe all commercially available energy efficiency measures and their attributes needed to perform an assessment of potential energy and capacity savings, including but not limited to all relevant costs of the measures, utility bill savings, utility avoided cost savings, peak demand and energy savings, measures' lifetimes, current market saturation of the measures, market availability of the measures, and non-energy-related features, costs and benefits.

c. A description of the methods and results for any screening or selection process used to identify technically viable energy efficiency measures. The utility shall explain its elimination of measures from further consideration. The utility shall provide an assessment of either annual economic potential or annual phase-in technical potential for peak demand and energy savings from projected adoption of technically viable measures, describing its methods and assumptions.

d. An assessment of the annual potential for utility implementation of the following special programs:

(1) Peak demand and energy savings from programs targeted at qualified low-income customers, including cooperative programs with community action agencies;

(2) Implementation of tree-planting programs; and

(3) Peak demand and energy savings from cost-effective assistance to homebuilders and homebuyers in meeting the requirements of the Iowa model energy code.

e. An identification of the utility's proposed performance goals for peak demand and energy savings from utility implementation of cost-effective energy efficiency programs and special programs. The utility shall identify annual goals, by energy efficiency program and total plan, for five years subsequent to the year of the filing. The utility may constrain or accelerate projected utility implementation of programs from estimates of economic or phase-in potential, based on its assessment of market potential. The utility may consider market factors including, but not limited to, market barriers to implementation of programs, the effects of rate impacts, lost opportunities which decrease future implementation of measures or programs, the nonenergy benefits and detriments of programs, uncertainty associated with industry restructuring, the strategic value of energy efficiency to the utility and other market factors it deems relevant. The utility shall fully describe its data and assumptions. In lieu of the data required in (1) through (5) below, the utility may reference relevant data and analyses filed in its energy efficiency plan, pursuant to subrule 35.8(2). The utility shall describe its analyses and results for factors relevant to the development of performance goals, including:

(1) Cost-effectiveness tests. The utility shall analyze for cost-effectiveness proposed programs, using the societal, utility, ratepayer impact and participant tests. The utility's analyses shall use inputs or factors realistically expected to influence cost-effective implementation of programs, including the avoided costs filed pursuant to rules 35.9(476) and 35.10(476) or avoided costs determined by the utility's alternative method. If the utility uses a test other than the societal test as the criterion for determining the cost-effectiveness of utility implementation of energy efficiency programs and plans, the utility shall describe and justify its use of the alternative test or combination of tests and compare the resulting impacts with the impacts resulting from the societal test.

(2) Cost-effectiveness threshold(s). The utility shall describe and justify the level or levels of cost-effectiveness, if greater or less than a benefit/cost ratio of 1.0, to be used as a threshold for cost-effective utility implementation of programs. The utility's threshold of cost-effectiveness for its plan as a whole shall be a benefit/cost ratio of 1.0 or greater.

(3) A description of the proposed programs to be implemented, proposed utility implementation techniques, the number of eligible participants and proposed rates of participation per year, and the estimated annual peak demand and energy savings.

(4) The budgets or levels of spending for utility implementation of programs, including proposed special programs addressing low-income, tree-planting and home-building assistance measures.

(5) The rate impacts and average bill impacts, by customer class, resulting from utility implementation of programs.

f. An optional sensitivity analysis. If the utility's proposed standards differ from the level of energy and capacity savings resulting from the utility's current plan by more than 25 percent, the utility shall provide a sensitivity analysis identifying key variables, including levels of spending, and showing their impact on cost-effectiveness, energy savings, and capacity savings. The purpose of the sensitivity analysis shall be to explore the range of potential for utility implementation of programs.

35.8(2) Proposed energy efficiency plan, programs, and budget and cost allocation. The utility shall file with the board an energy efficiency plan listing all proposed new, modified, and existing energy efficiency programs. The following information shall be provided:

a. The analyses and results of cost-effectiveness tests for the plan as a whole and for each program. Low-income and tree-planting programs shall not be tested for cost-effectiveness, unless the utility wishes to present the results of cost-effectiveness tests for informational purposes. The utility shall analyze proposed programs and the plan as a whole for cost-effectiveness, using the societal, utility, ratepayer impact and participant tests. If the utility uses a test other than the societal test as the criterion for determining the cost-effectiveness of utility implementation of energy efficiency measures, the utility shall describe and justify its use of the alternative test or combination of tests and compare the resulting impacts with the impacts resulting from the societal test. The utility shall describe and justify the level or levels of cost-effectiveness, if greater or less than a benefit/cost ratio of 1.0, to be used as a threshold for determining cost-effectiveness of programs. The utility's threshold of cost-effectiveness for its plan as a whole shall be a benefit/cost ratio of 1.0 or greater.

The utility shall provide an explanation of its sensitivity analysis identifying key variables showing the impact on cost-effectiveness. If appropriate and calculable, the utility shall adjust the energy and demand savings for the interactive effects of various measures contained within each program and shall adjust energy and demand savings of the plan as a whole for the interactive effects of programs. For the plan as a whole and for each program, the utility shall provide:

- (1) Cost escalation rates for each cost component of the benefit/cost test that reflect changes over the lives of the options in the potential program and benefit escalation rates for benefit components that reflect changes over the lives of the options;
- (2) Societal, utility cost, ratepayer impact measure, and participant test benefit/cost ratios; and
- (3) Net societal benefits.

b. Descriptions of each program. If a proposed program is identical to an existing program, the utility may reference the program description currently in effect. A description of each proposed program shall include:

- (1) The name of each program;
- (2) The customers each program targets;
- (3) The energy efficiency measures promoted by each program;
- (4) The proposed utility promotional techniques, including the rebates or incentives offered through each program; and
- (5) The proposed rates of program participation or implementation of measures, including both eligible and estimated actual participants.

c. The estimated annual energy and demand savings for the plan and each program for each year the measures promoted by the plan and program will produce benefits. The utility shall estimate gross and net capacity and energy savings, accounting for free riders, take-back effects, and measure degradation.

d. The budget for the plan and for each program for each year of implementation or for each of the next five years of implementation, whichever is less, itemized by proposed costs. The budget shall be consistent with the accounting plan required pursuant to subrule 35.12(1). The budget may include the amount of the remittance to the Iowa energy center and the center for global and regional environmental research and the alternative energy revolving loan fund. The plan and program budgets shall be categorized into:

- (1) Planning and design costs;
- (2) Administrative costs;
- (3) Advertising and promotional costs;
- (4) Customer incentive costs;

- (5) Equipment costs;
- (6) Installation costs;
- (7) Monitoring and evaluation costs; and
- (8) Miscellaneous costs.

Cost categories shall be further described by the following subcategories:

Classifications of persons to be working on energy efficiency programs, full-time equivalents, dollar amounts of labor costs, and purpose of work;

Type and use of equipment and other assets, including types of assets required and use of asset; and the name of outside firm(s) employed and a description of service(s) to be provided.

e. The rate impacts and average bill impacts, by customer class, resulting from the plan and each program.

f. A monitoring and evaluation plan. The utility shall describe in complete detail how it proposes to monitor and evaluate the implementation of its proposed programs and plan and shall show how it will accumulate and validate the information needed to measure the plan's performance against the standards. The utility shall propose a format for monitoring reports and describe how annual results will be reported to the board on a detailed, accurate and timely basis.

35.8(3) to 35.8(8) Rescinded IAB 1/13/99, effective 2/17/99.

35.8(9) *Coordination with other utilities and participation in plan preparation.* The utility shall provide the following reports:

a. A report which explains the results of attempts to coordinate energy efficiency programs with other gas or electric utilities sharing its service territory within the boundaries of incorporated municipalities having a population of 1000 or more individuals.

b. A report on the participation of interested persons in the preparation of the assessment of potential and energy efficiency plan pursuant to subrules 35.8(1) and 35.8(2). The report shall identify the persons with whom the utility consulted, the date and type of meetings held or other contacts made, and the results of the meetings and contacts.

35.8(10) *Pilot projects.* Pilot projects may be included as a program, if justified by the utility. Pilot projects shall explore areas of innovative or unproven approaches, as provided in Iowa Code section 476.1. The proposed evaluation procedures for the pilot project shall be included.

35.8(11) to 35.8(13) Rescinded IAB 1/13/99, effective 2/17/99.

199—35.9(476) Additional requirements for electric utilities. In addition to the requirements in rule 35.8(476), a plan for an electric utility shall include the following information:

35.9(1) *Load forecast.* Information specifying forecasted demand and energy use on a calendar year basis which shall include:

a. A statement, in numerical terms, of the utility's current 20-year forecasts including reserve margin for summer and winter peak demand and for annual energy requirements. The forecast shall not include the effects of the proposed programs in subrule 35.8(8), but shall include the effects to date of current ongoing utility energy efficiency programs.

b. The date and amount of the utility's highest peak demand within the past five years, stated on both an actual and weather-normalized basis. The utility shall include an explanation of the weather-normalization procedure.

c. A comparison of the forecasts made for each of the previous five years to the actual and weather-normalized demand in each of the previous five years.

d. An explanation of all significant methods and data used, as well as assumptions made, in the current 20-year forecast. The utility shall file all forecasts of variables used in its demand and energy forecasts and shall separately identify all sources of variables used, such as implicit price deflator, electricity prices by customer class, gross domestic product, sales by customer class, number of customers by class, fuel price forecasts for each fuel type, and other inputs.

e. A statement of the margins of error for each assumption or forecast.

f. An explanation of the results of sensitivity analyses performed, including a specific statement of the degree of sensitivity of estimated need for capacity to potential errors in assumptions, forecasts

and data. The utility may present the results and an explanation of other methods of assessing forecast uncertainty.

35.9(2) Class load data. Load data for each class of customer that is served under a separate rate schedule or is identified as a separate customer class and accounts for 10 percent or more of the utility's demand in kilowatts at the time of the monthly system peak for every month in the year. If those figures are not available, the data shall be provided for each class of customer that accounts for 10 percent of the utility's electric sales in kilowatt hours for any month in the reporting period. The data shall be based on a sample metering of customers designed to achieve a statistically expected accuracy of plus or minus 10 percent at the 90 percent confidence level for loads during the yearly system peak hour(s). These data must appear in the 1992 and all subsequent filings, except as provided for in paragraph 35.9(2) "c."

a. The following information shall be provided for each month of the previous year:

- (1) Total system class maximum demand (in kilowatts), number of customers in the class, and system class sales (in kilowatt-hours);
- (2) Jurisdictional class contribution (in kilowatts) to the monthly maximum system coincident demand as allocated to jurisdiction;
- (3) Total class contribution (in kilowatts) to the monthly maximum system coincident demand, if not previously reported;
- (4) Total system class maximum demand (in kilowatts) allocated to jurisdiction, if not previously reported; and
- (5) Hourly total system class loads for a typical weekday, a typical weekend day, the day of the class maximum demand, and the day of the system peak.

b. The company shall file an explanation, with all supporting work papers and source documents, as to how class maximum demand and class contribution to the maximum system coincident demand were allocated to jurisdiction.

c. The load data for each class of customer described above may be gathered by a multijurisdictional utility on a uniform integrated system basis rather than on a jurisdictional basis. Adjustments for substantive and unique jurisdictional characteristics, if any, may be proposed. The load data for each class of customer shall be collected continuously and filed annually, except for the period associated with necessary interruptions during any year to modify existing or implement new data collection methods. Data filed for the period of interruption shall be estimated. An explanation of the estimation technique shall be filed with the data. To the extent consistent with sound sampling and the required accuracy standards, an electric public utility is not required to annually change the customers being sampled.

35.9(3) Existing capacity and firm commitments. Information specifying the existing generating capacity and firm commitments to provide service. The utility shall include in its filing a copy of its most recent Load and Capability Report submitted to the Mid-continent Area Power Pool (MAPP).

a. For each generating unit owned or leased by the utility, in whole or in part, the plan shall include the following information:

- (1) Both summer and winter net generating capability ratings as reported to the National Electric Reliability Council (NERC).
- (2) The estimated remaining time before the unit will be retired or require life extension.

b. For each commitment to own or lease future generating firm capacity, the plan shall include the following information:

- (1) The type of generating capacity.
- (2) The anticipated in-service year of the capacity.
- (3) The anticipated life of the generating capacity.
- (4) Both summer and winter net generating capability ratings as reported to the NERC.

c. For each capacity purchase commitment which is for a period of six months or longer the plan shall include the following information:

- (1) The entity with whom commitments have been made and the time periods for each commitment.
- (2) The capacity levels in each year for the commitment.

d. For each capacity sale commitment which is for a period of six months or longer the following information:

- (1) The entity with whom a commitment has been made and the time periods for the commitment.
- (2) The capacity levels in each year.
- (3) The capacity payments to be received per kW per year in each year.
- (4) The energy payments to be received per kWh per year.
- (5) Any other payments the utility receives in each year.

35.9(4) *Capacity surpluses and shortfalls.* Information identifying projected capacity surpluses and shortfalls over the 20-year planning horizon which shall include:

a. A numerical and graphical representation of the utility's 20-year planning horizon comparing forecasted demand in each year from subrule 35.9(1) to committed capacity in each year from paragraphs 35.9(3) "a" to 35.9(3) "d." Forecasted peak demand shall include reserve requirements.

b. For each year of the 20-year planning horizon, the plan shall list in MW the amount that committed capacity either exceeds or falls below the forecasted demand.

35.9(5) *Capacity outside the utility's system.* Information about capacity outside of the utility's system that could meet its future needs including, but not limited to, cogeneration and independent power producers, expected to be available to the utility during each of the 20 years in the planning horizon. The utility shall include in its filing a copy of its most recent Load and Capability Report submitted to the Mid-continent Area Power Pool (MAPP).

35.9(6) *Future supply options and costs.* Information about the new supply options and their costs identified by the utility as the most effective means of satisfying all projected capacity shortfalls in the 20-year planning horizon in subrule 35.9(4) which shall include:

a. The following information which describes each future supply option as applicable:

- (1) The anticipated year the supply option would be needed.
- (2) The anticipated type of supply option, by fuel.
- (3) The anticipated net capacity of the supply option.

b. The utility shall use the actual capacity cost of any capacity purchase identified in paragraph 35.9(6) "a" and shall provide the anticipated annual cost per net kW per year.

c. The utility shall use the installed cost of a combustion turbine as a proxy for the capacity cost of any power plant identified in paragraph 35.9(6) "a." For the first power plant option specified in paragraph 35.9(6) "a," the following information shall be provided:

- (1) The anticipated life.
- (2) The anticipated total capital costs per net kW, including AFUDC if applicable.
- (3) The anticipated revenue requirement of the capital costs per net kW per year.
- (4) The anticipated revenue requirement of the annual fixed operations and maintenance costs, including property taxes, per net kW for each year of the planning horizon.
- (5) The anticipated net present value of the revenue requirements per net kW.
- (6) The anticipated revenue requirement per net kW per year calculated by utilization of an economic carrying charge.
- (7) The after tax discount rate used to calculate the revenue requirement per net kW per year over the life of the supply option.
- (8) Adjustment rates (for example, inflation or escalation rates) used to derive each future cost in paragraph 35.9(6) "c."

d. The capacity costs of the new supply options allocated to costing periods. The utility shall describe its method of allocating capacity costs to costing periods. The utility shall specify the hours, days, and weeks which constitute its costing periods. For each supply option identified in paragraph 35.9(6) "a," the plan shall include:

- (1) The anticipated annual cost per net kW per year of capacity purchases from subparagraph 35.9(6) "b"(6) allocated to each costing period if it is the highest cost supply option in that year.
- (2) The anticipated total revenue requirement per net kW per year from subparagraph 35.9(6) "c"(6) allocated to each costing period if it is the highest cost supply option in that year.

35.9(7) *Avoided capacity and energy costs.* Avoided capacity costs shall be based on the future supply option with the highest value for each year in the 20-year planning horizon identified in subrule 35.9(6). Avoided energy costs shall be based on the marginal costs of the utility's generating units or purchases. The utility shall use the same costing periods identified in 35.9(6) "b" when calculating avoided capacity and energy costs. A party may submit, and the board shall consider, alternative avoided capacity and energy costs derived by an alternative method. A party submitting alternative avoided costs shall also submit an explanation of the alternative method.

a. Avoided capacity costs. Calculations of avoided capacity costs in each costing period shall be based on the following formula:

$$\text{AVOIDED CAPACITY COST} = C \times (1 + \text{RM}) \times (1 + \text{DLF}) \times (1 + \text{EF})$$

C (capacity) is the greater of NC or RC.

NC (new capacity) is the value of future capacity purchase costs or future capacity costs expressed in dollars per net kW per year of the utility's new supply options from paragraphs 35.9(6) "b" and "c" in each costing period.

RC (resalable capacity) is the value of existing capacity expressed in dollars per net kW per year that could be sold to other parties in each costing period.

RM (reserve margin) is the generation reserve margin criterion adopted by the utility.

DLF (demand loss factor) is the system demand loss factor, expressed as a fraction of the net power generated, purchased, or interchanged in each costing period. For example, the peak system demand loss factor would be equal to peak system power loss (MW) divided by the net system peak load (MW) for each costing period.

EF (externality factor) is a 10 percent factor applied to avoided capacity costs in each costing period to account for societal costs of supplying energy. In addition, the utility may propose a different externality factor, but must document its accuracy.

b. Avoided energy costs. Calculations of avoided energy costs in each costing period shall be based on the following formula:

$$\text{AVOIDED ENERGY COSTS} = \text{MEC} \times (1 + \text{ELF}) \times (1 + \text{EF})$$

MEC (marginal energy cost) is the marginal energy cost expressed in dollars per kWh, inclusive of variable operations and maintenance costs, for electricity in each costing period.

ELF (system energy loss factor) is the system energy loss factor, expressed as a fraction of net energy generated, purchased, or interchanged in each costing period.

EF (externality factor) is a 10 percent factor applied to avoided energy costs in each costing period to account for societal costs of supplying energy. In addition, the utility may propose a different externality factor, but must submit documentation of its accuracy.

199—35.10(476) Additional requirements for gas utilities. In addition to the requirements of rule 35.8(476), a plan for a gas utility shall include the following information:

35.10(1) *Forecast of demand and transportation volumes.* Information specifying its demand and transportation volume forecasts which includes:

a. A statement in numerical terms of the utility's current 12-month and 5-year forecasts of total annual throughput and peak day demand, including reserve margin, based on the PGA year by customer class. The forecasts shall not include the effects of the proposed energy efficiency programs in subrule 35.8(8), but shall include the effects to date of current ongoing utility energy efficiency programs.

b. A statement in numerical terms of the utility's highest peak day demand and annual throughput for the past five years by customer class.

c. A comparison of the forecasts made for the preceding five years to the actual and weather-normalized peak day demand and annual throughput by customer class including an explanation of the weather-normalization procedure.

d. A forecast of the utility's demand for transportation volume for both peak day demand and annual throughput for each of the next five years.

e. The existing contract deliverability by supplier, contract and rate schedule for the length of each contract.

f. An explanation of all significant methods and data used, as well as assumptions made, in the current five-year forecast(s). The utility shall file all forecasts of variables used in its demand and energy forecasts. If variables are not forecasted, the utility shall indicate all sources of variable inputs.

g. A statement of the margins of error for each assumption or forecast.

h. An explanation of the results of the sensitivity analysis performed by the utility, including a specific statement of the degree of sensitivity of estimated need for capacity to potential errors in assumptions, forecasts, and data.

35.10(2) *Capacity surpluses and shortfalls.* Information identifying projected capacity surpluses and shortfalls over the five-year planning horizon which includes a numerical and graphical representation of the utility's five-year planning horizon comparing forecasted peak day demand in each year from paragraph 35.10(1)"a," to the total of existing contract deliverability, from paragraph 35.10(1)"e." The comparison shall list in dth or Mcf any amount for any year that contract deliverability falls below the forecast of peak day demand. Forecasted peak day demand shall include reserve margin.

35.10(3) *Supply options.* Information about new supply options identified by the utility as the most effective means of satisfying all projected capacity shortfall in the 12-month and 5-year planning horizons in subrule 35.10(2). For each supply option identified, the plan shall include:

a. The year the option would be needed.

b. The type of option.

c. The net peak day capacity.

d. The estimated future capacity costs per dth or Mcf of peak day demand of the options.

e. The estimated future energy costs per dth or Mcf of each option in current dollars.

f. A description of the method used to estimate future costs.

35.10(4) *Avoided capacity and energy costs.* Information regarding avoided costs, specifying the days and weeks which constitute the utility's peak and off-peak periods. Avoided costs shall be calculated for the peak and off-peak periods and adjusted for inflation to derive an annual avoided cost over a 20-year period. In addition, all parties may submit information specifying the hours, days, and weeks which constitute alternative costing periods. A party may submit, and the board shall consider, alternative avoided capacity and energy costs derived by an alternative method. A party submitting alternative avoided costs shall also submit an explanation of the alternative method.

a. *Avoided capacity costs.* Calculations of avoided capacity costs in the peak and off-peak periods shall be based on the following formula:

$$\text{AVOIDED CAPACITY COSTS} = [(D + OC) \times (1 + RM)] \times (1 + EF)$$

D (demand) is the greater of CD or FD.

CD (current demand cost) is the utility's average demand cost expressed in dollars per dth or Mcf during peak and off-peak periods.

FD (future demand costs) is the utility's average future demand cost over the 20-year period expressed in dollars per dth or Mcf when supplying gas during peak and off-peak periods.

RM (reserve margin) is the reserve margin adopted by the utility.

OC (other cost) is the value of any other costs per dth or Mcf related to the acquisition of gas supply or transportation by the utility over the 20-year period in the peak and off-peak periods.

EF (externality factor) is a 7.5 percent factor applied to avoided capacity costs in the peak and off-peak periods to account for societal costs of supplying energy. In addition, the utility may propose a different externality factor, but must submit documentation of its accuracy.

b. *Avoided energy costs.* Calculations of avoided energy costs in the peak and off-peak periods on a seasonal basis shall be based on the following formula:

$$\text{AVOIDED ENERGY COSTS} = (E + VOM) \times (1 + EF)$$

E (energy costs) is the greater of ME or FE.

ME (current marginal energy costs) is the utility's current marginal energy costs expressed in dollars per dth or Mcf during peak and off-peak periods.

FE (future energy costs) is the utility's average future energy costs over the 20-year period expressed in dollars per dth or Mcf during peak and off-peak periods.

VOM (variable operations and maintenance costs) is the utility's average variable operations and maintenance costs over the 20-year period expressed in dollars per dth or Mcf during peak and off-peak periods.

EF (externality factor) is a 7.5 percent factor applied to avoided energy costs in the peak and off-peak periods to account for societal costs of supplying energy. In addition, the utility may propose a different externality factor, but must submit documentation of its accuracy.

199—35.11(476) Additional filing requirements. In those years an electric utility does not file an energy efficiency plan, the utility shall file by May 15 the information required in subrules 35.9(1) and 35.9(2). If there has been no change in the utility's forecast procedure in regard to information required in paragraphs 35.9(1) "d" through "f," the utility may state "no change from previous forecast" for each paragraph. In those years a gas utility does not file an energy efficiency plan, the utility shall file by November 1 the information required in subrule 35.10(1). If there has been no change in the information required in paragraphs 35.10(1) "f" through "h," the utility shall identify the portions of the previous docket where the information is located.

199—35.12(476) Energy efficiency cost recovery. A utility shall be allowed to recover the previously approved costs, deferred past costs, and estimated contemporaneous expenditures of its approved energy efficiency plans through an automatic adjustment mechanism. The utility may propose to recover the portion of the costs of process-oriented industrial assessments related to energy efficiency. Only unrecovered costs may be recovered through the automatic adjustment mechanism, and costs may be recovered only once.

For purposes of this rule, "previously approved costs" are defined as expenditures and related costs approved for recovery in previous energy efficiency cost recovery contested cases.

"*Deferred past costs*" are defined as funds actually spent by the utility on energy efficiency programs in its approved plan including the carrying charges associated with the deferred recovery of those costs, as defined in paragraph 35.12(1) "b." Deferred past costs shall be amortized and recovered over a period not to exceed the term of the plan.

"*Estimated contemporaneous expenditures*" are defined as costs to be incurred during the current 12-month recovery period pursuant to an approved energy efficiency plan.

35.12(1) Accounting for costs. Each utility shall maintain accounting plans and procedures to account for all energy efficiency costs incurred on or after July 1, 1990.

a. Deferred past costs incurred on or after July 1, 1990, up to a date terminating the accumulation of deferred costs set by a board order, shall be charged to account 186, "Miscellaneous Deferred Debits," as defined in the uniform system of accounts for utilities as provided in 199 IAC 16.

b. A carrying charge determined using the current monthly AFUDC rate from the formula prescribed in the uniform system of accounts for utilities, as provided in 199 IAC 16, shall accrue on costs in the account described in paragraph 35.12(1) "a." A utility shall continue to accrue a carrying charge on the account's costs, compounded semiannually, until the date terminating accumulation of deferred costs set by a board order.

c. Estimated contemporaneous expenditures proposed for concurrent recovery through an automatic adjustment mechanism shall be charged, after the date set by a board order, to the current accounts prescribed by the uniform system of accounts, as provided in 199 IAC 16, and shall be further identified using the accounts described in paragraph 35.12(1) "d."

d. Each utility shall maintain a subaccount system, a work order system, or an accounting system which identifies individual costs by each program. Examples of individual items include, but are not limited to, the costs for planning and design, labor, advertising and promotion, rebates, customer incentives, equipment, installation, funding of the Iowa energy center and the center for global and regional environmental research, funding of the alternate energy revolving loan program, and consultant fees. Each utility shall maintain accurate employee, equipment, materials, and other records which identify all amounts related to each individual energy efficiency program.

35.12(2) Automatic adjustment mechanism. Each utility required to be rate-regulated shall file by March 1 of each year, subject to the board's approval, energy efficiency costs proposed to be recovered in rates for the 12-month recovery period beginning at the start of the first utility billing month at least 30 days following board approval. Each utility may elect to file its first energy efficiency automatic adjustment up to 120 days after the effective date of these rules.

35.12(3) Energy efficiency cost recovery (ECR) factors. The utility shall calculate ECR factors separately for each customer classification or grouping previously approved by the board. For all plans current at the time this rule becomes effective and for all future plans, if a utility desires to use customer classifications or allocations of indirect or other related costs other than those previously approved, such customer classifications or allocations of indirect or other related costs must be approved as part of a plan filing or of a modification thereof. ECR factors shall use the same unit of measurement as the utility's tariffed rates. ECR factors shall be calculated according to the following formula:

$$\text{ECR factor} = \frac{(\text{PAC}) + (\text{ADPC} \times 12) + (\text{ECE}) + \text{A}}{\text{ASU}}$$

ECR factor is the energy efficiency recovery amount per unit of sales over the 12-month recovery period.

PAC is the annual amount of previously approved costs from earlier ECR proceedings, until the previously approved costs are fully extinguished.

ADPC is amortized deferred past cost. It is calculated as the levelized monthly payment needed to provide a return of and a return on the utility's deferred past costs (DPC). ADPC is calculated as:

$$\text{ADPC} = \text{DPC} [r(1+r)^n] / [(1+r)^n - 1]$$

DPC is deferred past costs including carrying charges which have not previously been approved for recovery, until the deferred past costs are fully recovered.

n is the length of the utility's plan in months.

r is the applicable monthly rate of return calculated as:

$$r = (1+R)^{1/12} - 1 \text{ or}$$

$$r = R \div 12 \text{ if previously approved}$$

R is the pretax overall rate of return the board held just and reasonable in the utility's most recent general rate case involving the same type of utility service. If the board has not rendered a decision in an applicable rate case for a utility, the average of the weighted average cost rates for each of the capital structure components allowed in general rate cases within the preceding 24 months for Iowa utilities providing the same type of utility service will be used to determine the applicable pretax overall rate of return.

ECE is the estimated contemporaneous expenditures to be incurred during the 12-month recovery period.

A is the adjustment factor equal to overcollections or undercollections determined in the annual reconciliation and for adjustments ordered by the board in prudence reviews.

ASU is the annual sales units estimated for the 12-month recovery period.

35.12(4) Filing requirements. Each utility proposing automatic recovery for its energy efficiency costs shall provide the following information:

- a. The filing shall restate the derivation of each ECR factor previously approved by the board.
- b. The filing shall include new ECR factors based on allocation methods and customer classifications and groupings approved by the board in previous proceedings.
- c. The filing shall include all worksheets and detailed supporting data used to determine new ECR factors. Information already on file with the board may be incorporated by reference in the filing.
- d. The filing shall include a reconciliation comparing the amounts actually collected by the previous ECR factors to the amounts expended. Overcollections or undercollections shall be used to compute adjustment factors.
- e. If in a prudence review, the board has determined that previously recovered energy efficiency costs were imprudently incurred, adjustment factors shall include reductions for these amounts.

35.12(5) *Tariff sheets.* Upon approval of the new ECR factors, the utility shall file separate tariff sheets for board approval to implement the ECR factors in its rates.

199—35.13(476) Prudence review. The board shall periodically conduct a contested case to evaluate the reasonableness and prudence of the utility's implementation of energy efficiency plans and budgets. The burden shall be on the utility to prove it has taken all reasonable actions to cost-effectively implement an energy efficiency plan as it was approved.

35.13(1) *Information to be filed.* The parties to the prudence review shall provide the following information:

a. The utility shall file prepared direct testimony and exhibits in support of its past implementation results including information regarding: implementation issues; monitoring and evaluation issues; program costs; program benefits; energy and demand savings; and participation rates.

b. The Consumer Advocate Division of the Department of Justice and other intervenors to the contested case shall be allowed at least seven weeks to file rebuttal testimony and exhibits to the utility's direct testimony.

35.13(2) *Disallowance of past costs.* If the board finds the utility did not take all reasonable and prudent actions to cost-effectively implement its energy efficiency programs, the board shall determine the amount in excess of those costs that would have been incurred under reasonable and prudent implementation. That amount shall be deducted from the next ECR factors calculated pursuant to 199 IAC 35.12(3) until satisfied.

199—35.14(476) New structure energy conservation standards. A utility providing gas or electric service shall not provide service to any structure completed after April 1, 1984, unless the owner or builder of the structure has certified to the utility that the building conforms to the energy conservation requirements adopted under 661—16.801(103A) and 661—16.802(103A). If this compliance is already being certified to a state or local agency, a copy of that certification shall be provided to the utility. If no state or local agency is monitoring compliance with these energy conservation standards, the owner or builder shall certify that the structure complies with the standards by signing a form provided by the utility. No certification will be required for structures that are not heated or cooled by electric service, or are not intended primarily for human occupancy.

199—35.15(476) Exterior flood lighting.

35.15(1) *Newly installed lighting.* All newly installed public utility-owned exterior flood lighting shall be high-pressure sodium lighting or lighting with equivalent or better energy efficiency.

35.15(2) *In-service lighting replacement schedule.* In-service lighting shall be replaced with high-pressure sodium lighting or lighting with equivalent or better energy efficiency when worn out due to ballast or fixture failure for any other reason, such as vandalism or storm damage. A utility shall file with the board as part of its annual report required in 199—Chapter 23 a report stating progress to date in converting to high-pressure sodium lighting or lighting with equivalent or higher energy efficiency.

35.15(3) *Efficiency standards.* Lighting other than high-pressure sodium has equivalent or better energy efficiency if one or more of the following can be established:

- a.* For lamps less than 120 watts, the lumens-per-watt lamp rating is greater than 77.1, or
- b.* For lamps between 120 and 500 watts, the lumens-per-watt lamp rating is greater than 96, or
- c.* For lamps greater than 500 watts, the lumens-per-watt lamp rating is greater than 126, or
- d.* The new lighting uses no more energy per installation than comparable, suitably sized high-pressure sodium lighting, or
- e.* The new lighting consists of solid-state lighting (SSL) luminaries that have an efficacy rating equal to or greater than 66 lumens per watt according to a Department of Energy (DOE) Lighting Facts label, testing under the DOE Commercially Available LED Product Evaluation and Reporting Program

(CALiPER), or any other test that follows Illuminating Engineering Society of North America LM-79-08 test procedures.

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