

Green Rules as adopted by the Commission in Case No. [08-888-EL-ORD](#)

- [April 15, 2009 Opinion and Order](#),
- [June 17, 2009 Entry on Rehearing](#)
- [June 24, 2009 Entry Nunc Pro Tunc](#)
- [October 15, 2009 Entry on Rehearing](#)
- [October 28, 2009 Entry](#)

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Chapter 4901:1-39 Energy Efficiency and Demand Reduction Benchmarks**4901:1-39-01 Definitions**

- (A) "Achievable potential" means the reduction in energy usage or peak demand that would likely result from the expected adoption by homes and businesses of the most efficient, cost-effective measures, given effective program design, taking into account remaining barriers to customer adoption of those measures. Barriers may include market, financial, political, regulatory, or attitudinal barriers, or the lack of commercially available product. "Achievable potential" is a subset of "economic potential."
- (B) "Anticipated savings" means the reduction in energy usage or peak demand that will accrue from contractual commitments for program participation made in the reporting period, which measures in such programs are scheduled for installation in the subsequent reporting periods.
- (C) "Capital stock" means all devices, equipment, and processes that use or convert energy.
- (D) "Coincident peak-demand savings" means the demand savings for energy efficiency measures that are expected to occur during the summer on-peak period which is defined as June through August on weekdays between 3:00 p.m. and 6:00 p.m.
- (E) "Commission" means the public utilities commission of Ohio.

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- (F) "Cost effective" means the measure, program, or portfolio being evaluated that satisfies the total resource cost test.
- (G) "Demand response" means a change in customer behavior or a change in customer-owned or operated assets that affects the demand for electricity as a result of price signals or other incentives.
- (H) "Economic potential" means the reduction in energy usage or peak demand that would result if all homes and businesses adopted the most efficient and cost-effective measures. Economic potential is a subset of the "technical potential."
- (I) "Electric utility" has the meaning set forth in division (A)(11) of section [4928.01](#) of the Revised Code.
- (J) "Energy baseline" means the average total kilowatt-hours of distribution service sold to retail customers of the electric utility in the preceding three calendar years as reported in the electric utility's most recent long-term forecast report, pursuant to division (A)(2)(a) of section [4928.66](#) of the Revised Code. The total kilowatt-hours sold shall equal the total kilowatt-hours delivered by the electric utility.
- (K) "Energy benchmark" means the annual level of energy savings that an electric utility must achieve as provided in division (A)(1)(a) of section [4928.66](#) of the Revised Code.
- (L) "Energy efficiency" means reducing the consumption of energy while maintaining or improving the end-use customer's existing level of functionality, or while maintaining or improving the utility system functionality.
- (M) "Independent program evaluator" means the person(s) hired by one or more of the electric utilities, at the direction of the commission, to complete the following activities:
- (1) Monitor, verify, evaluate, and report on the electric energy savings and peak-demand reductions resulting from utility program and mercantile customer activities.
 - (2) Determine program and portfolio cost-effectiveness.
 - (3) Conduct program process evaluations.
 - (4) Perform due-diligence reviews of evaluations or documentation provided by an electric utility or mercantile customer, as directed by the commission.

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Such person shall work at the sole direction of the commission.

- (N) "Market transformation" means a lasting structural or behavioral change in the marketplace that increases customer adoption of energy efficiency or peak reduction measures that will be sustained after any program promoting such behavior ceases.
- (O) "Measure" means any material, device, technology, operational practice, or educational program that makes it possible to deliver a comparable level and quality of end-use energy service while using less energy or less capacity than would otherwise be required.
- (P) "Mercantile customer" has the meaning set forth in division (A)(19) of section [4928.01](#) of the Revised Code.
- (Q) "Nonenergy benefits" mean societal benefits that do not affect the calculation of program cost-effectiveness pursuant to the total resource cost test including but not limited to benefits of low-income customer participation in utility programs; reductions in greenhouse gas emissions, regulated air emissions, water consumption, natural resource depletion to the extent the benefit of such reductions are not fully reflected in cost savings; enhanced system reliability; or advancement of any other state policy enumerated in section [4928.02](#) of the Revised Code.
- (R) "Peak demand," when measuring reduction programs, means the average maximum hourly electricity usage during the highest 100 hours on the electric utility's system in a calendar year.
- (S) "Peak-demand baseline" means the average peak demand on the electric utility's system in the preceding three calendar years as reported in the electric utility's most recent long-term forecast report, pursuant to division (A)(2)(a) of section [4928.66](#) of the Revised Code.
- (T) "Peak-demand benchmark" means the reduction in peak demand an electric utility's system must achieve as provided in division (A)(1)(b) of section [4928.66](#) of the Revised Code.
- (U) "Person" shall have the meaning set forth in division (A)(24) of section [4928.01](#) of the Revised Code.
- (V) "Program" means a single offering of one or more measures provided to consumers. For example, a weatherization program may include insulation replacement, weather stripping, and window replacement measures.

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- (W) "Staff" means the staff or authorized representative of the public utilities commission.
- (X) "Technical potential" means the reduction in energy usage or peak demand that would result if all homes and businesses adopted the most efficient measures, regardless of cost.
- (Y) "Total resource cost test" means an analysis to determine if, for an investment in energy efficiency or peak-demand reduction measure or program, on a life-cycle basis, the present value of the avoided supply costs for the periods of load reduction, valued at marginal cost, are greater than the present value of the monetary costs of the demand-side measure or program borne by both the electric utility and the participants, plus the increase in supply costs for any periods of increased load resulting directly from the measure or program adoption. Supply costs are those costs of supplying energy and/or capacity that are avoided by the investment, including generation, transmission, and distribution to customers. Demand-side measure or program costs include, but are not limited to, the costs for equipment, installation, operation and maintenance, removal of replaced equipment, and program administration, net of any residual benefits and avoided expenses such as the comparable costs for devices that would otherwise have been installed, the salvage value of removed equipment, and any tax credits.
- (Z) "Verified savings" means an annual reduction of energy usage or peak demand from an energy efficiency or peak-demand reduction program directly measured or calculated using reasonable statistical and/or engineering methods consistent with approved measurement and verification guidelines.

4901:1-39-02 Purpose and scope

- (A) Pursuant to division (A)(1)(a) of section [4928.66](#) of the Revised Code, beginning in 2009, each electric utility is required to implement energy efficiency programs. Such programs, at a minimum, shall achieve established statutory benchmarks for energy efficiency. Additionally, pursuant to division (A)(1)(b) of section [4928.66](#) of the Revised Code, beginning in 2009, each electric utility is required to implement peak-demand reduction programs designed to achieve established statutory benchmarks for peak-demand reduction. The purpose of this chapter is to establish rules for the implementation of electric utility programs that will encourage innovation and market access for cost-effective energy efficiency and peak-demand reduction, achieve the statutory benchmark for peak-demand reduction, meet or exceed the statutory benchmark for energy efficiency, and provide for the participation of stakeholders in developing energy efficiency and peak-demand reduction programs for the benefit of the state of Ohio.

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- (B) The commission may, upon an application or a motion filed by a party, waive any requirement of this chapter, other than a requirement mandated by statute, for good cause shown.

4901:1-39-03 Program planning requirements

- (A) Assessment of potential. Prior to proposing its comprehensive energy efficiency and peak-demand reduction program portfolio plan, an electric utility shall conduct an assessment of potential energy savings and peak-demand reduction from adoption of energy efficiency and demand-response measures within its certified territory, which will be included in the electric utility's program portfolio filing pursuant to rule 4901:1-39-04 of the Administrative Code. An electric utility may collaborate with other electric utilities to co-fund or conduct such an assessment on a broader geographic basis than its certified territory. However, such an assessment must also disaggregate results on the basis of each electric utility's certified territory. Such assessment shall include, but not be limited to, the following:
- (1) Analysis of technical potential. Each electric utility shall survey and characterize the energy-using capital stock located within its certified territory and quantify its actual and projected energy use and peak demand. Based upon the survey and characterization, the electric utility shall conduct an analysis of the technical potential for energy efficiency and peak-demand reduction obtainable from applying alternate measures.
 - (2) Analysis of economic potential. For each alternate measure identified in its assessment of technical potential, the electric utility shall conduct an assessment of cost-effectiveness using the total resource cost test.
 - (3) Analysis of achievable potential. For each alternate measure identified in its analysis of economic potential as cost-effective, the electric utility shall conduct an analysis of achievable potential. Such analysis shall consider the ability of the program design to overcome barriers to customer adoption, including, but not limited to, appropriate bundling of measures.
 - (4) For each measure considered, the electric utility shall describe all attributes relevant to assessing its value, including, but not limited to potential energy savings or peak-demand reduction, cost, and nonenergy benefits.
- (B) Program design criteria. When developing programs for inclusion in its program portfolio plan, an electric utility shall consider the following criteria:

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- (1) Relative cost-effectiveness.
 - (2) Benefit to all members of a customer class, including nonparticipants.
 - (3) Potential for broad participation within the targeted customer class.
 - (4) Likely magnitude of aggregate energy savings or peak-demand reduction.
 - (5) Nonenergy benefits.
 - (6) Equity among customer classes.
 - (7) Relative advantages or disadvantages of energy efficiency and peak-demand reduction programs for the construction of new facilities, replacement of retiring capital stock, or retrofitting existing capital stock.
 - (8) Potential to integrate the proposed program with similar programs offered by other utilities, if such integration produces the most cost-effective result and is in the public interest.
 - (9) The degree to which a program bundles measures so as to avoid lost opportunities to attain energy savings or peak reductions that would not be cost-effective or would be less cost-effective if installed individually.
 - (10) The degree to which the program design engages the energy efficiency supply chain and leverages partners in program delivery.
 - (11) The degree to which the program successfully addresses market barriers or market failures.
 - (12) The degree to which the program leverages knowledge gained from existing program successes and failures.
 - (13) The degree to which the program promotes market transformation.
- (C) Promising measures not selected. Each electric utility shall identify measures considered but not found to be cost-effective or achievable but show promise for future deployment. The electric utility shall identify potential actions that it could undertake to improve the measure's technical potential, economic potential, and achievable potential to enhance the likelihood that the measure would become cost-effective and reasonably achievable.
- (D) The electric utility may seek to collaborate or consult with other utilities, regional and municipal governmental organizations, nonprofit organizations, businesses,

and other stakeholders to develop programs meeting the requirements of this chapter.

4901:1-39-04 Program portfolio plan and filing requirements

- (A) Each electric utility shall design and propose a comprehensive energy efficiency and peak-demand reduction program portfolio, including a range of programs that encourage innovation and market access for cost-effective energy efficiency and peak-demand reduction for all customer classes, which will achieve the statutory benchmarks for peak-demand reduction, and meet or exceed the statutory benchmarks for energy efficiency. An electric utility's first program portfolio plan filed pursuant to this rule, shall be filed with supporting testimony prior to January 1, 2010. Each electric utility shall file an updated program portfolio plan by April 15, 2013, and by the fifteenth of April every third year thereafter, unless otherwise directed by the commission.
- (B) Each electric utility shall demonstrate that its program portfolio plan is cost-effective on a portfolio basis. In general, each program proposed within a program portfolio plan must also be cost-effective, although each measure within a program need not be cost-effective. However, an electric utility may include a program within its program portfolio plan that is not cost-effective when that program provides substantial nonenergy benefits.
- (C) Content of filing. An electric utility's program portfolio plan shall include, but not be limited to, the following:
 - (1) An executive summary and its assessment of potential pursuant to paragraph (A) of rule 4901:1-39-03 of the Administrative Code.
 - (2) A description of stakeholder participation in program planning efforts and program portfolio development.
- (3) A description of attempts to align and coordinate programs with other public utilities' programs.
- (4) A description of existing programs. The electric utility shall provide a summary of existing programs with a recommendation for whether the program should continue and, if so, a description of its relationship to any proposed programs. If a program has previously been approved and is unchanged, the electric utility may reference the program description currently in effect. If the electric utility is proposing to modify an existing program, the electric utility shall provide a description of the proposed modification and the basis for proposed changes.

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- (5) A description of proposed programs. An electric utility shall describe each program proposed to be included within its program portfolio plan with at least the following information:
- (a) A narrative describing why the program is recommended pursuant to the program design criteria in this chapter.
 - (b) Program objectives, including projections and basis for calculating energy savings and/or peak-demand reduction resulting from the program.
 - (c) The targeted customer sector.
 - (d) The proposed duration of the program.
 - (e) An estimate of the level of program participation.
 - (f) Program participation requirements, if any.
 - (g) A description of the marketing approach to be employed, including rebates or incentives offered through each program, and how it is expected to influence consumer choice or behavior.
 - (h) A description of the program implementation approach to be employed.
 - (i) A program budget with projected expenditures, identifying program costs to be borne by the electric utility and collected from its customers, with customer class allocation, if appropriate.
 - (j) Participant costs, if any.
 - (k) Proposed market transformation activities, if any, which have been identified and proposed to be included in the program portfolio plan.
 - (l) A description of the electric utility's evaluation, measurement, and verification of the energy savings and/or peak-demand reduction resulting from each program and the process evaluations to be conducted by the electric utility.
- (D) Unless otherwise ordered by the commission, any person may file objections within sixty days after the filing of an electric utility's program portfolio plan. Any person filing objections shall specify the basis for all objections, including

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any proposed additional or alternative programs, or modifications to the electric utility's proposed program portfolio plan.

- (E) The commission shall set the matter for hearing and shall cause notice of the hearing to be published one time in a newspaper of general circulation in each county in the electric utility's certified territory. At such hearing, the electric utility shall have the burden to prove that the proposed program portfolio plan is consistent with the policy of the state of Ohio as set forth in section [4928.02](#) of the Revised Code, and meets the requirements of section [4928.66](#) of the Revised Code.

4901:1-39-05 Benchmark and annual status reports

- (A) Initial benchmark report. Within sixty days of the effective date of this rule, each electric utility shall file an initial benchmark report with the commission that identifies the following information:
- (1) The energy and demand baselines for kilowatt-hour sales and kilowatt demand for the reporting year; including a description of the method of calculating the baseline, with supporting data.
 - (2) The applicable statutory benchmarks for energy savings and electric utility peak-demand reduction.
- (B) An electric utility may file an application to adjust its sales and/or demand baseline. The baseline shall be normalized for weather and for changes in numbers of customers, sales, and peak demand to the extent such changes are outside the control of the electric utility. The electric utility shall include in its application all assumptions, rationales, and calculations, and shall propose methodologies and practices to be used in any proposed adjustments or normalizations. To the extent approved by the commission, normalizations for weather, changes in numbers of customers, sales, and peak demand shall be consistently applied from year to year.
- (C) Portfolio status report. By March fifteenth of each year, each electric utility shall file a portfolio status report addressing the performance of all approved energy efficiency and peak-demand reduction programs in its program portfolio plan over the previous calendar year which includes, at a minimum, the following information:
- (1) Compliance demonstration. Each electric utility shall include a section in its portfolio status report detailing its achieved energy savings, achieved demand reductions, and the expected demand reductions that its

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programs were reasonably designed to achieve, relative to its corresponding baselines. At a minimum, this section of the portfolio status report shall include each of the following:

- (a) An update to its benchmark report.
 - (b) A comparison with the applicable benchmark of actual energy savings and peak-demand reductions achieved by electric utility programs.
 - (c) An affidavit as to whether the reported performance complies with the statutory benchmarks.
- (2) Program performance assessment. Each electric utility shall include a section in its portfolio status report demonstrating whether it has successfully implemented the energy efficiency and demand-reduction programs approved in its program portfolio plan. At a minimum, this section of the annual portfolio status report shall include each of the following:
- (a) A description of each approved energy efficiency or peak-demand reduction program implemented in the previous calendar year including:
 - (i) The key activities undertaken in each program, the number and type of participants, a comparison of the forecasted savings to the verified savings achieved by such program, the magnitude of anticipated savings, and a trend analysis of how anticipated savings will be realized over the life of the program.
 - (ii) All energy savings counted toward the applicable benchmark as a result of energy efficiency improvements implemented by mercantile customers and committed to the electric utility.
 - (iii) All peak-demand reductions counted toward the applicable benchmark as a result of energy efficiency improvements, demand response, or demand reduction improvements implemented by mercantile customers and committed to the electric utility.
 - (iv) A description of all transmission and distribution infrastructure improvements made by the electric utility that

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reduce line losses to the extent the reduction in line losses has been applied to meet the applicable benchmarks with a calculation and description of the net impact of such improvements on losses.

- (b) An evaluation, measurement, and verification report that documents the energy savings and peak-demand reduction values and the cost-effectiveness of each energy efficiency and demand-side management program reported in the electric utility's portfolio status report. Such report shall include documentation of any process evaluations and expenditures, measured and verified savings, and cost-effectiveness of each program. Measurement and verification processes shall confirm that the measures were actually installed, the installation meets reasonable quality standards, and the measures are operating correctly and are expected to generate the predicted savings. Upon commission order, the staff may publish guidelines for program measurement and verification.
- (c) A recommendation for whether each program should be continued, modified, or eliminated. The electric utility may propose alternative programs to replace eliminated programs, taking into account the overall balance of programming in its program portfolio plan. The electric utility shall describe any alternate program or program modification by providing at least the information required for proposed programs in its program portfolio plan pursuant to this chapter. An electric utility may seek written staff approval to reallocate funds between programs serving the same customer class at any time, provided that the reallocation supports the goals of its approved program portfolio plan and is limited to no more than twenty-five per cent of the funds available for programs serving that customer class. In addition, an electric utility may change its program mix or budget allocations at any time, as long as it provides notice to all parties in the proceeding in which the program portfolio plan was approved.
- (D) Independent program evaluator report. Subsequent to the filing of the electric utility's portfolio status report, the independent program evaluator will prepare and file a report of the independent program evaluator's activities and conclusions in monitoring, verifying, and evaluating the energy savings and peak-demand reductions resulting from the electric utility programs and mercantile customer activities. The report shall also include the verification and evaluation, through the use of due-diligence techniques including project

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- inspections, of the electric utility's evaluation, measurement, and verification report.
- (E) An electric utility may satisfy its peak-demand reduction benchmarks through a combination of energy efficiency and peak-demand response programs implemented by electric utilities and/or programs implemented on mercantile customer sites where the mercantile program is committed to the electric utility.
- (1) For energy efficiency programs, an electric utility may count the programs' effects resulting in coincident peak-demand savings.
 - (2) For demand response programs, an electric utility may count demand reductions towards satisfying some or all of the peak-demand reduction benchmarks by demonstrating that either the electric utility has reduced its actual peak demand, or has the capability to reduce its peak demand and such capability is created under either of the following circumstances:
 - (a) A peak-demand reduction program meets the requirements to be counted as a capacity resource under the tariff of a regional transmission organization approved by the Federal Energy Regulatory Commission.
 - (b) A peak-demand reduction program equivalent to a regional transmission organization program, which has been approved by this commission.
- (F) A mercantile customer's energy savings and peak-demand reductions shall be measured by including the effects of all demand-response programs of the mercantile customer and all mercantile customer-sited energy efficiency and peak-demand reduction programs. A mercantile customer's energy savings and peak-demand reductions shall be presumed to be the effect of a demand response, energy efficiency, or peak-demand reduction program to the extent they involve the early retirement of fully functioning equipment, or the installation of new equipment that achieves reductions in energy use and peak demand that exceed the reductions that would have occurred had the customer used standard new equipment or practices where practicable. Electric utilities may make an alternative demonstration that mercantile customer energy savings or peak demand reductions are effects of such a program.
- (G) A mercantile customer may file, either individually or jointly with an electric utility, an application to commit the customer's demand reduction, demand response, or energy efficiency programs for integration with the electric utility's demand reduction, demand response, and energy efficiency programs, pursuant

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to division (A)(2)(d) of section [4928.66](#) of the Revised Code. Such application shall:

- (1) Address coordination requirements between the electric utility and the mercantile customer with regard to voluntary reductions in load by the mercantile customer, which are not part of an electric utility program, including specific communication procedures.
 - (2) Grant permission to the electric utility and staff to measure and verify energy savings and/or peak-demand reductions resulting from customer-sited projects and resources.
 - (3) Identify all consequences of noncompliance by the customer with the terms of the commitment.
 - (4) Include a copy of the formal declaration or agreement that commits the mercantile customer's programs for integration, including any requirement that the electric utility will treat the customer's information as confidential and will not disclose such information except under an appropriate protective agreement or a protective order issued by the commission pursuant to rule 4901-1-24 of the Administrative Code.
 - (5) Include a description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results, and identify and explain all deviations from any program measurement and verification guidelines that may be published by the commission.
- (H) An electric utility shall not count in meeting any statutory benchmark the adoption of measures that are required to comply with energy performance standards set by law or regulation, including but not limited to, those embodied in the Energy Independence and Security Act of 2007, or an applicable building code.
- (I) Benchmarks not reasonably achievable. If an electric utility determines that it is unable to meet a benchmark due to regulatory, economic, or technological reasons beyond its reasonable control, the electric utility may file an application to amend its benchmarks. To the extent that forecasted peak demand and peak prices do not materialize for economic reasons, the electric utility may be granted a waiver of its benchmark for the difference between actual performance and expected performance of demand response programs.
- (J) Benchmarks not reasonably achievable. If an electric utility determines that it is unable to meet a benchmark due to regulatory, economic, or technological

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reasons beyond its reasonable control, the electric utility may file an application to amend its benchmarks. To the extent that forecasted peak demand and peak prices do not materialize for economic reasons, the electric utility may be granted a waiver of its benchmark for the difference between the actual and expected performance of demand response programs. In any such application, the electric utility shall demonstrate that it has exhausted all reasonable compliance options.

4901:1-39-06 Review of annual reports and issuance of the commission verification report

- (A) Any person may file comments regarding an electric utility's initial benchmark report or annual portfolio status report filed pursuant to this chapter within thirty days of the filing of such report.
- (B) Upon receipt of such report, the staff shall review the report and any timely filed comments, and file its findings and recommendations regarding program implementation and compliance with the applicable benchmarks, and any proposed modifications thereto, verifying the electric utility's compliance or noncompliance with its approved program portfolio plan and the mandated energy efficiency improvements and peak-demand reductions. If staff finds that an electric utility has not demonstrated compliance with the approved program portfolio plan or annual sales or peak-demand reductions required by division (A) of section [4928.66](#) of the Revised Code, staff may recommend remedial action and/or the assessment of a forfeiture. Additionally, the staff may recommend modifications to a program within the electric utility's program portfolio plan.
- (C) The commission may schedule a hearing on the electric utility's portfolio benchmark report or status report. If staff recommends a forfeiture, the commission shall schedule a hearing on the staff's recommendations.
- (D) The commission shall adopt, or modify and adopt, the staff's recommendations and findings as its annual verification report of the electric utility's achieved energy efficiency and peak-demand reductions pursuant to division (B) of section [4928.66](#) of the Revised Code. Such verification report shall be provided to the consumers' counsel of Ohio.

4901:1-39-07 Recovery mechanism

- (A) With the filing of its proposed program portfolio plan, the electric utility may submit a request for recovery of an approved rate adjustment mechanism, commencing after approval of the electric utility's program portfolio plan, of costs due to electric utility peak-demand reduction, demand response, energy efficiency program costs, appropriate lost distribution revenues, and shared

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savings. Any such recovery shall be subject to annual reconciliation after issuance of the commission verification report issued pursuant to this chapter.

- (1) The extent to which the cost of transmission and distribution infrastructure investments that are found to reduce line losses may be classified as or allocated to energy efficiency or peak-demand reduction programs, pursuant to division (A)(2)(d) of section [4928.66](#) of the Revised Code, shall be limited to the portion of those investments that are attributable to and undertaken primarily for energy efficiency or demand reduction purposes.
 - (2) Mercantile customers, who commit their peak-demand reduction, demand response, or energy efficiency projects for integration with the electric utility's programs as set forth in rule 4901:1-39-08 of the Administrative Code, may individually or jointly with the electric utility, apply for exemption from such recovery.
- (B) Any person may file objections within thirty days of the filing of an electric utility's application for recovery. If the application appears unjust or unreasonable, the commission may set the matter for hearing.

4901:1-39-08 Mercantile customer exemptions

An application to commit a mercantile customer program for integration filed pursuant to paragraph G of rule 4901:1-39-05 of the Administrative Code, may include a request for an exemption from the cost recovery mechanism set forth in rule 4901:1-39-07 of the Administrative Code. To be eligible for such exemption, the mercantile customer must consent to providing an annual report on the energy savings and electric utility peak-demand reductions achieved in the customer's facilities in the most recent year. The report shall include the following:

- (A) A demonstration that energy savings and peak-demand reductions associated with the mercantile customer's program are the result of investments that meet the total resource cost test, or that the electric utility's avoided cost exceeds the cost to the electric utility for the mercantile customer's program.
- (B) A statement distinguishing programs implemented before and after January 1, 2009, or in future reports filed for years subsequent to 2009, before and after the most recent year.
- (C) A quantification of the energy savings or peak-demand reductions for programs initiated prior to 2009 in the baseline period, recognizing that programs may

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have diminishing effects over time as technology evolves or equipment degrades.

- (D) A recognition that the energy saving and demand reduction effects during the electric utility's baseline period of any mercantile customer-sited energy efficiency or peak-demand reduction programs that are integrated into an electric utility's programs are excluded from the electric utility's baselines by increasing its baseline for energy savings and baseline for peak-demand reductions by the amount of mercantile customer energy savings and demand reductions.
- (E) A listing and description of the customer programs implemented, including measures taken, devices or equipment installed, processes modified, or other actions taken to increase energy efficiency and reduce peak demand, including specific details such as the number, type, and efficiency levels both of the installed equipment and the old equipment that is being replaced, if applicable.
- (F) An accounting of expenditures made by the mercantile customer for each program and its component energy savings and electric utility peak-demand reduction attributes.
- (G) The timeline showing when each program went into effect, and when the energy savings and peak-demand reductions occurred.
- (H) Any request for an exemption may be combined with any other reasonable arrangement, approved pursuant to Chapter 4901:1-38 of the Administrative Code, if such reasonable arrangement contains appropriate measurements and verification of program results.

Chapter 4901:1-40 Alternative Energy Portfolio Standard**4901:1-40-01 Definitions**

4901:1-40-01 Definitions

- (A) "Advanced energy fund" has the meaning set forth in section [4928.61](#) of the Revised Code.
- (B) "Advanced energy resource" has the meaning set forth in division (A)(34) of section [4928.01](#) of the Revised Code.
- (C) "Alternative energy resource" has the meaning set forth in division (A)(1) of section [4928.64](#) of the Revised Code.

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- (D) "Biologically derived methane gas" means landfill methane gas; or gas from the anaerobic digestion of organic materials, including animal waste, municipal wastewater, institutional and industrial organic waste, food waste, yard waste, and agricultural crops and residues.
- (E) "Biomass energy" means energy produced from organic material derived from plants or animals and available on a renewable basis, including but not limited to: agricultural crops, tree crops, crop by-products and residues; wood and paper manufacturing waste, including nontreated by-products of the wood manufacturing or pulping process, such as bark, wood chips, sawdust, and lignin in spent pulping liquors; forestry waste and residues; other vegetation waste, including landscape or right-of-way trimmings; algae; food waste; animal wastes and by-products (including fats, oils, greases and manure); biodegradable solid waste; and biologically derived methane gas.
- (F) "Clean coal technology" means any technology that removes or has the design capability to remove criteria pollutants and carbon dioxide from an electric generating facility that uses coal as a fuel or feedstock as identified in the control plan requirements in paragraph (C) of rule 4901:1-41-03 of the Administrative Code.
- (G) "Co-firing" means simultaneously using multiple fuels in the generation of electricity. In the event of co-firing, the proportion of energy input comprised of a renewable energy resource shall dictate the proportion of electricity output from the facility that can be considered a renewable energy resource.
- (H) "Commission" means the public utilities commission of Ohio.
- (I) "Deliverable into this state" means that the electricity originates from a facility within a state contiguous to Ohio. It may also include electricity originating from other locations, pending a demonstration that the electricity could be physically delivered to the state.
- (J) "Demand response" has the meaning set forth in rule 4901:1-39-01 of the Administrative Code.
- (K) "Demand-side management" has the meaning set forth in paragraph (F) of rule 4901:5-5-01 of the Administrative Code.
- (L) "Distributed generation" means electricity production that is on-site and is connected to the electricity grid.
- (M) "Double-counting" means utilizing renewable energy, renewable energy credits, or energy efficiency savings to do any of the following:

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- (1) Satisfy multiple Ohio state renewable energy requirements or such requirements for more than one state.
 - (2) Comply with both the energy efficiency and advanced energy statutory benchmarks.
 - (3) Support multiple voluntary product offerings.
 - (4) Substantiate multiple marketing claims.
 - (5) Some combination of these.
- (N) "Electric generating facility" means a power plant or other facility where electricity is produced.
- (O) "Electric services company" has the meaning set forth in division (A)(9) of section [4928.01](#) of the Revised Code.
- (P) "Electric utility" has the meaning set forth in division (A)(11) of section [4928.01](#) of the Revised Code.
- (Q) "Energy efficiency" has the meaning set forth in rule 4901:1-39-01 of the Administrative Code.
- (R) "Energy storage" means a facility or technology that permits the storage of energy for future use as electricity.
- (S) "Fuel cell" means a device that uses an electrochemical energy conversion process to produce electricity.
- (T) "Geothermal energy" means hot water or steam extracted from geothermal reservoirs in the earth's crust and used for electricity generation..
- (U) "Hydroelectric energy" means electricity generated by a hydroelectric facility as defined in division (A)(35) of section [4928.01](#) of the Revised Code.
- (V) "Hydroelectric facility" has the meaning set forth in division (A)(35) of section [4928.01](#) of the Revised Code.
- (W) "Mercantile customer" has the meaning set forth in division (A)(19) of section [4928.01](#) of the Revised Code.
- (X) "MISO" means "Midwest Independent Transmission System Operator, Inc." or any successor regional transmission organization.

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- (Y) "Person" shall have the meaning set forth in division (A)(24) of section [4928.01](#) of the Revised Code.
- (Z) "PJM" means "PJM Interconnection, LLC" or any successor regional transmission organization.
- (AA) "Placed-in-service" means when a facility or technology becomes operational.
- (BB) "Renewable energy credit" means the environmental attributes associated with one megawatt-hour of electricity generated by a renewable energy resource, except for electricity generated by facilities as described in paragraph (E) of rule 4901:1-40-04 of the Administrative Code.
- (CC) "Renewable energy resource" has the meaning set forth in division (A)(35) of section [4928.01](#) of the Revised Code.
- (DD) "Solar energy resources" means solar photovoltaic and/or solar thermal resources.
- (EE) "Solar photovoltaic" means energy from devices which generate electricity directly from sunlight through the movement of electrons.
- (FF) "Solar thermal" means the concentration of the sun's energy, typically through the use of lenses or mirrors, to drive a generator or engine to produce electricity.
- (GG) "Solid wastes" has the meaning set forth in section [3734.01](#) of the Revised Code.
- (HH) "Staff" means the commission staff or its authorized representative.
- (II) "Standard service offer" means an electric utility offer to provide consumers, on a comparable and nondiscriminatory basis within its certified territory, all competitive retail electric services necessary to maintain essential electric service to consumers, including a firm supply of electric generation service.
- (JJ) "Wind energy" means electricity generated from wind turbines, windmills, or other technology that converts wind into electricity.

4901:1-40-02 Purpose and scope

- (A) This chapter addresses the implementation of the alternative energy portfolio standard, including the incorporation of renewable energy credits, as detailed in sections [4928.64](#) and [4928.65](#) of the Revised Code respectively. Parties affected by these alternative energy portfolio standard rules include all Ohio electric utilities and all electric services companies serving retail electric customers in Ohio. Any

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entities that do not serve Ohio retail electric customers shall not be required to comply with the terms of the alternative energy portfolio standard.

- (B) The commission may, upon an application or a motion filed by a party, waive any requirement of this chapter, other than a requirement mandated by statute, for good cause shown.

4901:1-40-03 Requirements

- (A) All electric utilities and affected electric services companies shall ensure that, by the end of the year 2024 and each year thereafter, electricity from alternative energy resources equals at least twenty-five per cent of their retail electric sales in the state.
- (1) Up to half of the electricity supplied from alternative energy resources may be generated from advanced energy resources.
- (2) At least half of the electricity supplied from alternative energy resources shall be generated from renewable energy resources, including solar energy resources, in accordance with the following annual benchmarks:

Annual benchmarks for alternative energy resources generated from renewable and solar energy resources		
<u>By end of year:</u>	<u>Renewable Energy Resources</u>	<u>Solar Energy Resources</u>
2009	0.25%	0.004%
2010	0.50%	0.01%
2011	1.0%	0.03%
2012	1.5%	0.06%
2013	2.0%	0.09%
2014	2.5%	0.12%
2015	3.5%	0.15%
2016	4.5%	0.18%
2017	5.5%	0.22%
2018	6.5%	0.26%
2019	7.5%	0.30%
2020	8.5%	0.34%
2021	9.5%	0.38%
2022	10.5%	0.42%
2023	11.5%	0.46%
2024 and each year thereafter	12.5%	0.50%

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- (a) At least half of the annual renewable energy resources, including solar energy resources, shall be met through electricity generated by facilities located in this state. Facilities located in the state shall include a hydroelectric generating facility that is located on a river that is within or bordering this state, and wind turbines located in the state's territorial waters of Lake Erie.
 - (b) To qualify towards a benchmark, any electricity from renewable energy resources, including solar energy resources, that originates from outside of the state must be shown to be deliverable into this state.
- (3) All costs incurred by an electric utility in complying with the requirements of section [4928.64](#) of the Revised Code, shall be avoidable by any consumer that has exercised choice of electricity supplier, during such time that a customer is served by an electric services company.
- (B) The baseline for compliance with the alternative energy resource requirements shall be determined using the following methodologies:
- (1) For electric utilities, the baseline shall be computed as an average of the three preceding calendar years of the total annual number of kilowatt-hours of electricity sold under its standard service offer to any and all retail electric customers whose electric load centers are served by that electric utility and are located within the electric utility's certified territory. The calculation of the baseline shall be based upon the average, annual, kilowatt-hour sales reported in that electric utility's three most recent forecast reports or reporting forms.
 - (2) For electric services companies, the baseline shall be computed as an average of the three preceding calendar years of the total annual number of kilowatt-hours of electricity sold to any and all retail electric consumers served by the company in the state, based upon the kilowatt-hour sales in the electric services company's most recent quarterly market-monitoring reports or reporting forms.
 - (a) If an electric services company has not been continuously supplying Ohio retail electric customers during the preceding three calendar years, the baseline shall be computed as an average of annual sales data for all calendar years during the preceding three years in which the electric services company was serving retail customers.

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- (b) For an electric services company with no retail electric sales in the state during the preceding three calendar years, its initial baseline shall consist of a reasonable projection of its retail electric sales in the state for a full calendar year. Subsequent baselines shall consist of actual sales data, computed in a manner consistent with paragraph (B)(2)(a) of this rule.
- (3) An electric utility or electric services company may file an application requesting a reduced baseline to reflect new economic growth in its service territory or service area. Any such application shall include a justification indicating why timely compliance based on the unadjusted baseline is not feasible, a schedule for achieving compliance based on its unadjusted baseline, quantification of a new change in the rate of economic growth, and a methodology for measuring economic activity, including objective measurement parameters and quantification methodologies.
- (C) Beginning in the year 2010, each electric utility and electric services company annually shall file a plan for compliance with future annual advanced- and renewable-energy benchmarks, including solar, utilizing at least a ten-year planning horizon. This plan, to be filed by April fifteenth of each year, shall include at least the following items:
 - (1) Baseline for the current and future calendar years.
 - (2) Supply portfolio projection, including both generation fleet and power purchases.
 - (3) A description of the methodology used by the company to evaluate its compliance options.
 - (4) A discussion of any perceived impediments to achieving compliance with required benchmarks, as well as suggestions for addressing any such impediments.

4901:1-40-04 Qualified resources

- (A) The following resources or technologies, if they have a placed-in-service date of January 1, 1998, or after, are qualified resources for meeting the renewable energy resource benchmarks:
 - (1) Solar photovoltaic or solar thermal energy.
 - (2) Wind energy.

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- (3) Hydroelectric energy.
 - (4) Geothermal energy.
 - (5) Solid waste energy derived from fractionalization, biological decomposition, or other process that does not principally involve combustion.
 - (6) Biomass energy.
 - (7) Energy from a fuel cell.
 - (8) A storage facility, if it complies with the following requirements:
 - (a) The electricity used to pump the resource into a storage reservoir must qualify as a renewable energy resource, or the equivalent renewable energy credits are obtained.
 - (b) The amount of energy that may qualify from a storage facility is the amount of electricity dispatched from the storage facility.
 - (9) Distributed generation system used by a customer to generate electricity from one of the resources or technologies listed in paragraphs (A)(1) to (A)(8) of this rule.
 - (10) A renewable energy resource created on or after January 1, 1998, by the modification or retrofit of any facility placed in service prior to January 1, 1998.
- (B) The following resources or technologies, if they have a placed-in-service date of January 1, 1998, or after, are qualified resources for meeting the advanced energy resource benchmarks:
- (1) Any modification to an electric generating facility that increases its generation output without increasing the facility's carbon dioxide emissions (tons per year) in comparison to its actual annual carbon dioxide emissions preceding the modification. In such an instance, it is the incremental increase in generation output that may be quantified and applied toward an advanced energy requirement.
 - (2) Any distributed generation system, designed primarily to meet the energy needs of the customer's facility that utilizes co-generation of electricity and thermal output simultaneously.

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- (3) Clean coal technology.
 - (4) Advanced nuclear energy technology, from:
 - (a) Advanced nuclear energy technology consisting of generation III technology as defined by the nuclear regulatory commission or other later technology.
 - (b) Significant improvements to existing facilities. In such an instance, it is the incremental increase in generation attributable to the improvement that may be quantified and applied toward an advanced energy requirement. Extension of the life of existing nuclear generation capacity shall not qualify as advanced nuclear energy technology.
 - (5) Energy from a fuel cell.
 - (6) Advanced solid waste or construction and demolition debris conversion technology that results in measurable greenhouse gas emission reductions.
 - (7) Demand-side management and energy efficiency, above and beyond that used to comply with any other regulatory standard or programs.
- (C) The following new or existing mercantile customer-sited resources may be qualified resources for meeting electric utilities' annual, renewable- or advanced-energy resource benchmarks, as applicable, provided that it does not constitute double-counting for any other regulatory requirement and that the mercantile customer has committed the resource for integration into the electric utility's demand-response, energy efficiency, or peak-demand reduction programs pursuant to rule 4901:1-39-08 of the Administrative Code.
- (1) Renewable energy resources from mercantile customers include the following:
 - (a) Electric generation equipment that uses a renewable energy resource and is owned or controlled by a mercantile customer.
 - (b) Any renewable energy resource of the mercantile customer that can be utilized effectively as part of an alternative energy resource plan of an electric utility and would otherwise qualify as a renewable energy resource if it were utilized directly by an electric utility.

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- (2) Advanced energy resources from mercantile customers include the following:
 - (a) A resource that improves the relationship between real and reactive power.
 - (b) A mercantile customer-owned or controlled resource that makes efficient use of waste heat or other thermal capabilities.
 - (c) Storage technology that allows a mercantile customer more flexibility to modify its demand or load and usage characteristics.
 - (d) Electric generation equipment owned or controlled by a mercantile customer that uses an advanced energy resource.
 - (e) Any advanced energy resource of the mercantile customer that can be utilized effectively as part of an advanced energy resource plan of an electric utility and would otherwise qualify as an advanced energy resource if it were utilized directly by an electric utility.

- (D) An electric utility or electric services company may use renewable energy credits (REC) to satisfy all or part of a renewable energy resource benchmark, including a solar energy resource benchmark.
 - (1) To be eligible for use towards satisfying a benchmark, a REC must originate from a facility that meets the definition of a renewable energy resource, including solar energy resources, and be measured by a utility-grade meter in compliance with paragraph B of rule 4901:1-10-05 of the Administrative Code, for facilities with generating capacity of more than six kilowatts. Such facilities could include a mercantile customer-sited resource that is not committed for integration into an electric utility's demand-response, energy efficiency, or peak-demand reduction program pursuant to rule 4901:1-39-08 of the Administrative Code but that otherwise qualifies under the terms of paragraph (A) of this rule.
 - (2) To use RECs as a means of achieving partial or complete compliance, an electric utility or electric services company must be a registered member in good standing of at least one of the following:
 - (a) The PJM's generation attributes tracking system.
 - (b) The MISO's renewable energy tracking system.

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- (c) Another credible tracking system approved for use by the commission.
 - (3) A REC may be used for compliance any time in the five calendar years following the date of its initial purchase or acquisition.
 - (4) Double counting is prohibited.
 - (5) The RECs must be associated with electricity that was generated no earlier than July 31, 2008.
- (E) For a generating facility of seventy-five megawatts or greater that is situated within this state and has committed by December 31, 2009, to modify or retrofit its generating unit or units to enable the facility to generate principally from biomass energy by June 30, 2013, the number of RECs produced by each megawatt-hour of electricity generated principally from biomass energy shall equal the actual percentage of biomass feedstock heat input used to generate such megawatt-hour multiplied by the quotient obtained by dividing the then existing unit dollar amount used to determine a renewable energy compliance payment as provided under division (C)(2)(b) of section [4928.64](#) of the Revised Code, by the then existing market value of one REC, but such megawatt-hour shall not equal less than one credit.
- (F) An entity seeking resource qualification shall file an application for certification of its resources or technologies, upon such forms as may be prescribed by the commission. The application shall include a determination of deliverability to the state in accordance with paragraph (I) of rule 4901:1-40-01 of the Administrative Code.
- (1) Any interested person may file a motion to intervene and file comments and objections to any application filed under this rule within twenty days of the date of the filing of the application.
 - (2) The commission may approve, suspend, or deny an application within sixty days of it being filed. If the commission does not act within sixty days, the application is deemed automatically approved on the sixty-first day after the date filed.
 - (3) If the commission suspends the application, the applicant shall be notified of the reasons for such suspension and may be directed to furnish additional information. The commission may act to approve or deny a suspended application within ninety days of the date that the application was suspended.

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- (4) Upon commission approval, the applicant shall receive notification of approval and a numbered certificate where applicable. The commission shall provide this certificate number to the appropriate attribute tracking system.
 - (5) Representatives of certified facilities must notify the commission within thirty days of any material changes in information previously submitted to the commission during the certification process. Failure to do so may result in revocation of certification status.
 - (6) Certification of a resource or technology shall not predetermine compliance with annual benchmarks, and does not constitute any commission position regarding cost recovery.
- (G) At its discretion, the commission may classify any new technology or additional resource as an advanced- or renewable-energy resource. Any interested person may request a hearing on such classification.

4901:1-40-05 Annual status reports and compliance reviews

- (A) Unless otherwise ordered by the commission, each electric utility and electric services company shall file by April fifteenth of each year, on such forms as may be published by the commission, an annual alternative energy portfolio status report analyzing all activities undertaken in the previous calendar year to demonstrate how the applicable alternative energy portfolio benchmarks and planning requirements have or will be met. Staff shall conduct annual compliance reviews with regard to the benchmarks under the alternative energy portfolio standard.
- (1) Beginning in the year 2010, the annual review will include compliance with the most recent applicable renewable- and solar-energy resource benchmark.
 - (2) Beginning in the year 2025, the annual review will include compliance with the most recent applicable advanced energy resource benchmark.
 - (3) The annual compliance reviews shall consider any under-compliance an electric utility or electric services company asserts is outside its control, including but not limited to, the following:
 - (a) Weather-related causes.
 - (b) Equipment shortages for renewable or advanced energy resources.

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- (c) Resource shortages for renewable or advanced energy resources.
- (B) Any person may file comments regarding the electric utility's or electric services company's alternative energy portfolio status report within thirty days of the filing of such report.
- (C) Staff shall review each electric utility's or electric services company's alternative energy portfolio status report and any timely filed comments, and file its findings and recommendations and any proposed modifications thereto.
- (D) The commission may schedule a hearing on the alternative energy portfolio status report.

4901:1-40-06 Force majeure

An electric utility or electric services company may seek a force majeure determination from the commission for all or part of a minimum renewable- or solar-energy benchmark.

- (A) A decision on a request for a force majeure determination will be rendered within ninety days of an electric utility or electric services company filing a request for such determination. The process and timeframes for such a determination shall be set by entry of the commission, the legal director, deputy legal director, or attorney examiner.
 - (1) At the time of requesting such a determination from the commission, an electric utility or electric services company shall demonstrate that it pursued all reasonable compliance options including, but not limited to, renewable energy credit (REC) solicitations, REC banking, and long-term contracts.
 - (2) The request shall include an assessment of the availability of qualified in-state resources, as well as qualified resources within the territories of PJM and the MISO.
- (B) If the commission determines that force majeure conditions exist, it may modify that compliance obligation of the electric utility or electric services company, as it considers appropriate to accommodate the finding.
 - (1) Such modification does not automatically reduce future-year obligations.
 - (2) The commission retains the right to increase a future year's compliance obligation by the amount of any under compliance in a previous year that is attributed to a force majeure determination.

4901:1-40-07 Cost cap

- (A) An electric utility or electric services company may file an application requesting a determination from the commission that its reasonably expected cost of compliance with an advanced energy resource benchmark would exceed its reasonably expected cost of generation to customers by three per cent or more. The process and timeframes for such a determination shall be set by entry of the commission, the legal director, deputy legal director, or attorney examiner.
 - (1) The burden of proof for substantiating such a claim shall remain with the electric utility or electric services company.
 - (2) An electric utility or electric services company shall pursue all reasonable compliance options prior to requesting such a determination from the commission.
 - (3) In the case that the commission makes such a determination, the electric utility or electric services company may not be required to fully comply with that specific benchmark.

- (B) An electric utility or electric services company may file an application requesting a determination from the commission that its reasonably expected cost of compliance with a renewable energy resource benchmark, including a solar energy resource benchmark, would exceed its reasonably expected cost of generation to customers by three per cent or more. The process and timeframes for such a determination shall be set by entry of the commission, the legal director, deputy legal director, or attorney examiner.
 - (1) The burden of proof for substantiating such a claim shall remain with the electric utility or electric services company.
 - (2) An electric utility or electric services company shall pursue all reasonable compliance options prior to requesting such a determination from the commission.
 - (3) In the case that the commission makes such a determination, the electric utility or electric services company may not be required to fully comply with that specific benchmark.

- (C) Calculations involving a three per cent cost cap shall consist of comparing the total expected cost of generation to customers of an electric utility or electric services company, while satisfying an alternative energy portfolio standard requirement, to the total expected cost of generation to customers of the electric

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utility or electric services company without satisfying that alternative energy portfolio standard requirement.

- (D) Any costs included in a commission-approved unavoidable surcharge for construction or environmental expenditures of generation resources shall be excluded from consideration as a cost of compliance under the terms of the alternative energy portfolio standard and therefore, would not count against the applicable cost cap. Such costs should, however, be included in the calculation of the total expected cost of generation to customers described in paragraph (C) of this rule.
- (E) If the commission makes a determination that a three per cent provision is triggered, the electric utility or electric services company shall comply with each benchmark up to the point that the three per cent increment would be reached for each benchmark.

4901:1-40-08 Compliance payments

- (A) Any electric utility or electric services company that does not achieve an annual renewable energy resource benchmark, including a solar benchmark, shall remit a compliance payment based on the amount of noncompliance rounded up to the next megawatt hour (MWh), unless the commission has identified the existence of force majeure conditions or the commission has determined that the three per cent cost-cap provision would be exceeded in the event of full compliance.
- (1) The required payment for noncompliance with any solar energy resource benchmark shall be calculated by quantifying the level of noncompliance, rounded to the next MWh, and multiplying this figure by the per MWh amount in the table below.

<u>Solar Energy Resources - Compliance Payment</u>	
<u>Year</u>	<u>Payment per MWh</u>
<u>2009</u>	<u>\$450</u>
<u>2010 and 2011</u>	<u>\$400</u>
<u>2012 and 2013</u>	<u>\$350</u>
<u>2014 and 2015</u>	<u>\$300</u>
<u>2016 and 2017</u>	<u>\$250</u>
<u>2018 and 2019</u>	<u>\$200</u>
<u>2020 and 2021</u>	<u>\$150</u>
<u>2022 and 2023</u>	<u>\$100</u>
<u>2024 and beyond</u>	<u>\$50</u>

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- (2) The required payment for noncompliance with any renewable energy resource benchmark, excluding solar, shall be calculated by quantifying the level of noncompliance, rounded to the next MWh, and multiplying this figure by an amount determined by the commission.
 - (a) The per MWh payment for renewable energy resources for the year 2009 is forty-five dollars.
 - (b) Beginning in the year 2010, the per MWh payment for renewable energy resources will be adjusted annually to reflect the annual change to the consumer price index as defined in section [101.27](#) of the Revised Code. Such adjustment shall be performed by staff no later than June first of each calendar year. This annual adjustment shall be calculated using the following formula:
$$= ((\text{CPIYR2}/\text{CPIYR1}) * \text{current per MWh payment})$$
 - (c) In no event shall the compliance payment for renewable energy resources be less than forty-five dollars per MWh.
 - (3) At least annually, the staff shall conduct a review of the renewable energy resource market, including solar, both within this state and within the regional transmission systems active in the state. The results of this review shall be used to determine if changes to the solar- or renewable-energy compliance payments are warranted, as follows:
 - (a) The commission may increase compliance payments if needed to ensure that electric utilities and electric services companies are not using the payments in lieu of acquiring or producing energy or RECs from qualified renewable resources, including solar.
 - (b) Any recommendation to reduce the compliance payments shall be presented to the general assembly.
- (B) Any compliance payment shall be submitted to the commission for deposit to the credit of the advanced energy fund. All compliance payments shall be delivered to the commission within thirty days of the imposition of any compliance payment requirement.
 - (C) Compliance payments shall be subject to such collection and enforcement procedures as apply to the collection of a forfeiture under sections [4905.55](#) to [4905.60](#) and [4905.64](#) of the Revised Code.

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- (D) Any electric utility or electric services company found to be liable for a compliance payment is prohibited from passing compliance payments on to consumers. In the event that a compliance payment is required, an electric utility or electric services company shall submit an attestation, signed by a company officer or designee, indicating that it will not seek to recover the specific compliance payment from consumers. Such attestation shall be submitted to staff within thirty days of the imposition of any compliance payment requirement.

4901:1-40-09 Annual report

- (A) Pursuant to division (D)(1) of section [4928.64](#) of the Revised Code, an annual report shall be submitted to the general assembly addressing at least the following topics:
- (1) The compliance status of electric utilities and electric services companies with respect to the advanced- and renewable-energy resource benchmarks.
 - (2) Suggested strategies for electric utility and electric services company compliance.
 - (3) Suggested strategies for encouraging the use of alternative energy resources in supplying this state's electricity needs in a manner that considers:
 - (a) Available technology.
 - (b) Costs.
 - (c) Job creation.
 - (d) Economic impacts.
- (B) The report shall be submitted in accordance with section [101.68](#) of the Revised Code.
- (C) Prior to its submission to the general assembly, the report will be issued for public comment by interested persons for thirty days, unless otherwise ordered by the commission. The process and timeframes for soliciting public comment shall be set by entry of the commission, the legal director, deputy director, or attorney examiner.

Chapter 4901:1-41 Greenhouse Gas Reporting and Carbon Dioxide Control Planning

4901:1-41-01 Definitions

- (A) "Carbon dioxide control planning" means the establishment and implementation of a structured, verifiable process including goals, policies, and procedures, to measure carbon dioxide emissions and control options on both a facility and a system-wide scale over five-, ten- and twenty-year periods.
- (B) Commission means the public utilities commission of Ohio.
- (C) "The Climate Registry" means the nonprofit collaboration among North American states, provinces, territories and native sovereign nations, using the website at www.theclimateregistry.org, that sets consistent and transparent standards to calculate, verify, and publicly report greenhouse gas emissions into a single registry.
- (D) "Electric generating facility" means an electric generating plant and associated facilities capable of producing electricity of fifty megawatts or larger.
- (E) "Greenhouse gas" means the emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and/or sulphur hexafluoride.
- (F) "Public utility" means those entities included within the definition of "public utility" set forth in section [4905.02](#) of the Revised Code, or within the definition of "electric service company" set forth in section [4928.01](#) of the Revised Code.

4901:1-41-02 Purpose and scope

- (A) This chapter provides rules for the reporting of greenhouse gas emissions and carbon dioxide control planning for electric generating facilities within Ohio, pursuant to section [4928.68](#) of the Revised Code.
- (B) The commission may, upon an application or a motion filed by a party, waive any requirement of this chapter, other than a requirement mandated by statute, for good cause shown.

4901:1-41-03 Greenhouse gas reporting and carbon dioxide control planning

- (A) Unless otherwise directed by the commission, any public utility owning or operating an electric generating facility within Ohio shall become a participating member in The Climate Registry and shall report greenhouse gas emissions according to the protocols approved by The Climate Registry.

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- (B) Any person who owns or operates an electric generating facility within Ohio shall file with the commission by April fifteenth of each calendar year an environmental control plan, including carbon dioxide control planning. A copy of such plan shall also be provided to the director of the Ohio environmental protection agency, or his designee.
- (C) The environmental control plan shall include all relevant technical information on the current conditions, goals, and potential actions for resource planning or environmental compliance. Any technology included in this plan, including clean coal, shall be based upon the most current scientific and engineering design capability of any facility or that has been designed to have the capability to control the emissions of criteria pollutants and carbon dioxide within the parameters of economically feasible best technology.

Chapter 4901:5-1 Long-Term Forecast Reports**4901:5-1-01 Definitions**

As used in Chapters 4901:5-1 to 4901:5-7 of the Administrative Code:

- (A) "Business office" means any office maintained by the reporting person where bills issued by the reporting person may be paid and discussed with its representatives.
- (B) "Commission" means the public utilities commission of Ohio.
- (C) "Electric utility" has the meaning set forth in division (A)(11) of section [4928.01](#) of the Revised Code.
- (D) "Electric transmission owner" means the owner of a major utility facility as defined in division (A)(1)(a) of section [4935.04](#) of the Revised Code.
- (E) "Gas distribution line and associated facility" means a pipeline and associated facilities other than gathering or transmission line in a distribution area.
- (F) "Gas gathering line and associated facility" means a pipeline and associated facilities which transport gas from a current production facility to a transmission line or main.
- (G) "Gas or natural gas transmission line and associated facilities" has the meaning set forth in rule [4906-1-01](#) of the Administrative Code.
- (H) "Long-term forecast report" has the meaning set forth in section [4935.04](#) of the Revised Code.

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- (I) "Major utility facility", has the meaning set forth in division (A)(1) of section [4935.04](#) of the Revised Code.
- (J) "Person" has the meaning set forth in section [4906.01](#) of the Revised Code.
- (K) "Reporting person" means any person required to file a long-term forecast report under section [4935.04](#) of the Revised Code.
- (L) "Substantial change" includes, but is not limited to:
 - (1) A change in forecasted peak loads or energy consumption over the forecast period of greater than an average of one-half of one per cent per year as calculated in rule [4901:5-3-03](#) of the Administrative Code.
 - (2) Demonstration of good cause to the commission by an interested party.
- (M) "Electric generating facility" means an electric generating plant and associated facilities capable of producing electricity.

4901:5-1-02 Form of long-term forecast report filing required

Except for electric services companies exempted pursuant to division (A)(1) of section [4928.05](#) of the Revised Code, each person owning or operating a major utility facility within this state, or furnishing gas, natural gas, or electricity directly to more than fifteen thousand customers within this state shall annually furnish a long-term forecast report to the commission for its review, in compliance with the rules set forth in this chapter.

The following rules were not modified in Case No. 08-888-EL-ORD:

[4901:5-1-03 Form of long-term forecast reports additional requirements.](#)

[4901:5-1-04 Notice of substantial change.](#)

Chapter 4901:5-3 Filing and Fees for Long-Term Forecast Reports**4901:5-3-01 Long-term forecast report due dates**

- (A) All electric transmission owners or electric utilities required by section 4935.04 of the Revised Code to file a long-term forecast report must file annually on or before April fifteenth. For years in which their forecast does not show substantial change, the electric transmission owner or the electric utility may file only the forms specified in Chapter 4901:5-5 of the Administrative Code in satisfying the requirements of this rule. In any year that a hearing is required under division (D)(3) of section [4935.04](#) of the Revised Code, the electric transmission owner or electric utility must file a complete long-term forecast report.

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- (B) All gas and natural gas distribution companies required by section [4935.04](#) of the Revised Code to file a long-term forecast report must file annually on or before June first. On alternating years, each gas utility may file only the forms specified in Chapter 4901:5-7 of the Administrative Code in satisfying the requirements of this rule. In any year that a hearing is required under division (D)(3) of section [4939.04](#) of the Revised Code, the reporting utility must file a complete long-term forecast report.
- (C) On or before December thirty-first of each year, the commission shall notify each electric transmission owner or electric utility of the number of copies of its long-term forecast report it shall be required to submit at the next filing. On or before February fifteenth of each year, the commission shall notify each gas or natural gas distribution company of the number of copies of its long-term forecast report it shall be required to submit at the next filing. In the event that no notice is sent by the commission, the company shall submit the same number of copies of the long-term forecast report submitted with the previous year's filing.
- (D) Notwithstanding the requirements of paragraphs (A) and (B) of this rule, the commission may grant an extension of the filing deadline for good cause shown.

4901:5-3-02 Fees

- (A) Fees for electric transmission owners or electric utilities shall be submitted annually to the commission on or before May first.
- (B) Fees for gas and natural gas distribution companies shall be submitted annually to the commission on or before September fifteenth.
- (C) All fee payments shall be made by check, payable to "the public utilities commission of Ohio."
- (D) The commission shall annually determine the fee each utility must pay, and shall notify each utility as to that amount at least thirty days prior to the date payment is due.
- (E) Fees for electric transmission owners or electric utilities will be based on:
 - (1) For electric transmission owners, the fee shall be two and one-half mills per megawatt hour delivery based upon the energy deliveries for loads connected to the system inside Ohio for the most recent year for which actual data is reported on the most recently filed form FE-T1 column twelve.

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- (2) For electric utilities, the fee shall be two and one-half mills per megawatt-hour delivery based upon the net energy for load for the most recent year for which actual data is reported on the most recently filed form FE-D1 column eight.
- (F) Fees for gas and natural gas distribution companies will be based on two factors:
- (1) In-state total number of meters in December of the preceding year, as reported to the commission on form SG-1.
 - (2) Total in-state sales for the most recent calendar year for which actual data are reported to the commission on the most recently filed form SG-1.
- (G) Annual fees for gas and natural gas distribution companies shall be the sum of the following charges:
- (1) One hundred mills per meter.
 - (2) Two hundred ninety-seven mills per million cubic feet.

4901:5-3-03 Calculation of forecast rates of change

- (A) For the purposes of division (D)(3)(c)(i) of section [4935.04](#) of the Revised Code, the change in the average annual rate of change in the forecasted electric peak loads or energy delivery shall be calculated by comparing the average annual compound rate of change of the previous year's long-term forecast with the average annual rate of change of the current year's long-term forecast. The average annual compound rate of change shall be calculated as the rate of change occurring between year zero and year ten.
- (B) The average annual compound rate of change in electric energy delivery for a given forecast shall be calculated as the rate of change occurring between year zero and year ten. For electric utilities, the rate of change shall be calculated based upon the net energy for load on form FE-D1, column eight.
- (C) The average annual compound rate of change in electric peak loads for a given forecast shall be calculated as the rate of change occurring between year zero and year ten. The greater of winter or summer internal load shall be used to determine average annual compound rate of change. For electric utilities, the rate of change shall be based upon the electric utility's forecast of its seasonal peak load demand in Ohio as reported on form FE-D3.
- (D) For the purposes of division (D)(3)(c)(i) of section [4935.04](#) of the Revised Code, the change in the average annual rate of change in the forecasted gas

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consumption shall be calculated by comparing the average annual compound rate of change of the previous year's long-term forecast with the average annual compound rate of change of the current year's long-term forecast. The average annual compound rate of change shall be calculated as the rate of change occurring between year zero and year ten.

- (E) The average annual compound rate of change in gas consumption for a given forecast shall be calculated as the rate of change occurring between year zero and year ten, as reported in the sum of column ten, total consumption, of form FG1-1 plus column four, total volumes transported by respondent for on-system customers, of form FG1-6.

Chapter 4901:5-5 Electric Utility Forecast Report Filing Requirements**4901:5-5-01 Definitions**

- (A) "ATC" means available transfer capability as defined by the regional reliability organization standards.
- (B) "Alternative energy resource" has the meaning set forth in division (A)(1) of section [4928.64](#) of the Revised Code.
- (C) "Available system capability" means the installed capability of all generating units on the utility system plus firm purchases.
- (D) "Capability" means the net seasonal demonstrated rating of generating equipment, as defined by the regional reliability organization reliability standards.
- (E) "Certified territory" means the service area established for an electric supplier under sections [4933.81](#) to [4933.90](#) of the Revised Code.
- (F) "Demand-side management" means those programs or activities that are designed to modify the magnitude and/or patterns of electricity consumption in a utility's service area by means of equipment installed or actions taken on the customer's premises.
- (G) "Electric transmission owner" means the owner of a major utility facility as defined in section [4935.04](#) of the Revised Code.
- (H) "Energy-price relationships" means the calculated or observed effect on peak load, load shape, or energy consumption resulting from changes in the retail price of electricity or other fuels.

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- (I) "Forecast year," "year of the forecast," or "year zero" means the year in which the forecast is filed.
- (J) "Forecast period" means year zero through year ten.
- (K) "Integrated operating system" means a group of electric transmission owners or electric utilities who are members of a jointly or commonly operated system as a single entity.
- (L) "Integrated resource plan" means that plan or program, established by a person subject to the requirements of this chapter, to furnish electric energy services in a cost-effective and reasonable manner consistent with the provision of adequate and reliable service, which gives appropriate consideration to supply- and demand-side resources and transmission or distribution investments for meeting the person's projected demand and energy requirements.
- (M) "Internal load" of a system means the summation of the net output of its generators plus the net of interconnection receipts and deliveries.
- (N) "Interruptible load" means load that can be curtailed or reduced at the supplier's discretion or in accordance with a contractual agreement.
- (O) "Load" means the amount of power needed to be delivered at a given point on an electric system.
- (P) "Load modification" means the impact of a demand-side management, energy efficiency, demand reduction, price responsive demand, or demand response program designed to influence customers' patterns of electricity use in order to modify the utility's load shape.
- (Q) "Load shape" means the distribution of a utility's total electricity demand measured over time, usually expressed as a curve which plots megawatts supplied against time of occurrence, and illustrates the varying magnitude of the load during that time period.
- (R) "Native load" of a system means the internal load minus interruptible loads.
- (S) "Nonutility generation" means any source of electricity which is interconnected with a utility's system, but is not exclusively owned by an electric utility.
- (T) "Peak demand" or "peak load" means the electric transmission owner's or electric utility's maximum sixty-minute integrated clock hour predicted or actual load for the year.

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- (U) "Price responsive demand" means the predictable response to changes in wholesale electricity prices of electricity demand by consumers who are served at retail rates or prices that can vary based on wholesale electricity prices or market conditions.
- (V) "Renewable energy resource" has the meaning set forth in division (A)(35) of section [4928.01](#) of the Revised Code.
- (W) "Reporting person" means any person required to file a long-term forecast report under section [4935.04](#) of the Revised Code.
- (X) "Supply-side resources" mean those resources that directly increase the amount of electricity available for consumption in a utility's certified territory.
- (Y) "Transfer capability," means the ability of the transmission owner's system to move power over its system to another interconnected transmission system or distribution utility while meeting all national standard reliability requirements.
- (Z) "TTC" means total transfer capacity as defined by the regional reliability organization standards and is the measure of the ability of the interconnected electric systems to reliably move or transfer power from one area to another over all transmission lines or paths within the interconnected electric systems.

4901:5-5-02 Purpose and scope

- (A) This chapter specifies the reporting requirements for long-term forecast reports filed by electric utilities and transmission owners pursuant to Chapter 4901:5-1 of the Administrative Code.
- (B) Unless otherwise directed by the commission, all reports shall be filed using such forms as may be posted on the commission's web site. Such forms may be changed without further commission entry and each reporting person should check the commission's web site to obtain the current forms before filing a report.
- (C) The commission may, upon an application or a motion filed by a party, waive any requirement of this chapter, other than a requirement mandated by statute, for good cause shown.

4901:5-5-03 Forecast report requirements for electric utilities and transmission owners

- (A) Summary of the long-term forecast report.

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The long-term forecast report shall contain a summary describing the electric utility's forecast of loads and the resource plan to meet that load, and shall include at a minimum:

- (1) The planning objectives.
 - (2) A summary of its forecasts of energy and peak load demands and the key assumptions or projections underlying these forecasts.
 - (3) A description of the process by which the energy and peak load forecasts were developed.
- (B) General guidelines. The following guidelines shall be used in the preparation of the forecast:
- (1) The forecast must be based upon independent analysis by the reporting electric transmission owner or electric utility.
 - (2) The forecast may be based on those forecasting methods that yield the most useful results to the electric transmission owner or electric utility.
 - (3) Where the required data have not been calculated directly, relevant conversion factors shall be displayed.
- (C) Special subject areas.
- (1) The following matters shall specifically be addressed:
 - (a) A description of the extent to which the reporting electric transmission owner or electric utility coordinates its load and resource forecasts with those of other systems such as affiliated systems in a holding company group, associated systems in an integrated operating system or other coordinating organizations, or other neighboring systems.
 - (b) A description of the manner in which such forecasts are coordinated, and any problems experienced in efforts to coordinate forecasts.
 - (c) A brief description of any polls, surveys, or data-gathering activities used in preparation of the forecast.

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- (2) No later than six months prior to the required date of submission of the forecast, the commission may supply the reporting electric transmission owner or electric utility:
 - (a) Copies of appropriate commission or other state documents or public statements that include the state energy policy for consideration in preparation of the forecast.
 - (b) Such current energy policy changes or deliberations, which, due to their immediate significance, the commission determines to be relevant for specific identification in the forecast (including but not limited to new legislation, regulations, or adjudicatory findings). The reporting person shall provide a discussion of the impacts of such factors and how it has taken these factors into account.
- (3) Existing energy efficiency, demand reduction, and demand response programs and policies of the reporting person, which support energy conservation and load modification, shall be described along with an estimate of their impacts on energy and peak demand and supply resources.
- (4) Energy-price relationships:
 - (a) To the extent possible, identify the relationship between price and energy consumption and describe how such changes are accounted for in the forecast.
 - (b) To the extent possible, specify a demand function that will or can be used to identify the relationship between any dynamic retail prices and peak load, which captures the impact of price responsive demand.
 - (c) A description of, and justification for, the methodologies employed for determining such energy-price relationships shall be included.
- (D) Forecast documentation. The purpose of the documentation section of the report is to permit a thorough review of the forecast methodology and test its validity. The components of the forecast documentation include:
 - (1) A description of the forecast methodology employed, including:
 - (a) Overall methodological framework chosen.

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- (b) Specific analytical techniques used, their purpose, and the forecast component to which they are applied.
 - (c) The manner in which specific techniques are related in producing the forecast.
 - (d) Where statistical techniques have been used:
 - (i) All relevant equations and data.
 - (ii) The size of the standard error of the estimate, and the size of the forecasting error, associated with each relevant forecasting model equation, this information shall be included for each forecast at the bottom of forms FE-D1 to FE-D6.
 - (iii) A description of the technique.
 - (iv) The reason for choosing the technique.
 - (v) Identification of significant computer software used.
 - (e) An explanation of how controllable and interruptible loads are forecasted and how they are treated in the total forecast.
 - (f) An identification of load factors or other relevant conversion factors and a description of how they are used within the forecast.
 - (g) Where the methodology for any sector has changed significantly from the previous year, a discussion of the rationale for the change.
- (2) Assumptions and special information. The reporting person shall:
- (a) For each significant assumption made in preparing the forecasts, include a discussion of the basis for the assumption and the impact it has on the forecast results. Give sources of the assumption if other than the reporting person.
 - (b) Identify special information bearing on the forecast (e.g., the existence of a major planned industrial expansion program in the area of service or other need determined on a regional basis).
- (3) Database documentation. The responsibilities of the reporting person with regard to its forecast database are as follows:

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- (a) The reporting person shall provide or cause to be provided:
 - (i) A brief description of all data sets used in making the forecast, both internal and external, input and output, and a citation to the sources.
 - (ii) The reasons for the selection of the specific database used.
 - (iii) A clear identification of any significant adjustments made to raw data in order to adapt them for use in the forecast, including, to the extent practicable:
 - (a) The nature of the adjustment made.
 - (b) The basis for the adjustment made.
 - (c) The magnitude of the adjustment.
 - (b) If a hearing is to be held on the forecast in the current forecast year, the reporting person shall provide to the commission in electronic formats or other medium as the commission directs, all data series, both input and output, raw and adjusted, and model equations used in the preparation of the forecast.
 - (c) The reporting person shall provide to the commission, on request:
 - (i) Copies of all data sets used in making the forecasts, including both raw and adjusted data, input and output data, and complete descriptions of any mathematical, technical, statistical, or other model used in preparing the data.
 - (ii) A narrative explaining the data sets and any adjustments made with the data to adapt it for use in the forecast.

4901:5-5-04 Forecasts for electric transmission owners**(A) General guidelines.**

The electric transmission owner shall provide or cause to be provided data on the use of its transmission lines and facilities.

- (1) The forecast shall include data on all existing transmission lines and associated facilities of one hundred twenty-five kilovolts (kV) and above as defined by the commission, for year zero to year ten.

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- (2) The forecast shall include data on all planned transmission lines and associated facilities of one hundred twenty-five kilovolts (kV) and above as well as substantial planned additions to, and replacement of existing facilities, as defined by the commission for year zero to year ten.
 - (3) The reporting electric transmission owner shall be prepared to supply to the commission on demand, additional data and maps of transmission lines and facilities.
- (B) Transmission energy data and peak demand forecast forms.

The electric transmission owner's forecast shall be submitted in an electronic form prescribed by the commission or its staff.

- (1) Electric transmission owners shall file energy delivery forecast (megawatt hours/year) data: Actual and forecast as shown on form FE-T1. The electric transmission owner shall indicate the total energy it received from all generating sources connected to their transmission system within Ohio as well as the total energy received from all generating sources connected to their system. They shall indicate the total energy received at interconnections with other electric transmission owners within Ohio as well as the total energy received from all its interconnections. The electric transmission owner shall report the total energy deliveries to interconnections within Ohio as well as to all its interconnections. The electric transmission owner shall report the total energy deliveries for loads within Ohio as well as to all load deliveries.
- (2) Electric transmission owners shall file system seasonal peak load demand forecasts: Actual and forecast system peak demand levels for summer and winter seasons as displayed on form FE-T2, covering both native and internal loads, as defined in the form.
- (3) Monthly data of energy and peak loads. The electric transmission owner shall specify in detail the methodology employed to produce monthly forecasts of energy and peak load for the current year and one year in the future. The reporting electric transmission owner shall provide or cause to be provided monthly information as required on the following forms:
 - (a) "Total monthly energy forecast" forecast information concerning monthly energy forecasts shall be provided for two years on form FE-T3.

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- (b) "Monthly internal peak load forecast" forecast information concerning monthly peak load forecasts shall be provided for two years on form FE-T4.
- (c) "Monthly energy transaction" the reporting electric transmission owner shall provide or cause to be provided monthly data on all energy received and delivered for the twelve months of the most recent year for which actual data is reported on the forms FE-T5 and FE-T6:
 - (i) On form FE-T5 part A, the electric transmission owner shall provide or cause to be provided monthly data on all energy received under firm contract and nonfirm contract:
 - (a) From power plants directly connected to their transmission system.
 - (b) From other sources.
 - (c) The total energy received from all sources for the month.
 - (ii) On form FE-T5 part B, the electric transmission owner shall provide or cause to be provided monthly data on energy delivered under firm and nonfirm contract for the total system and for delivery points located in Ohio:
 - (a) The amount of power delivered to affiliated electric utilities.
 - (b) The amount of power delivered to other nonaffiliated investor-owned electric utilities.
 - (c) The amount of power delivered to cooperatively owned electric utilities.
 - (d) The amount of power delivered to municipally owned electric utilities.
 - (e) The amount of power delivered to federal and state electric agencies.
 - (f) The amount of power delivered for nondistribution service.

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- (g) The total amount of power delivered.
 - (iii) On form FE-T5 part C, the electric transmission owner shall provide or cause to be provided monthly data on system losses and/or unaccounted for energy by firm and nonfirm transmission service.
- (4) The reporting electric transmission owner shall provide the following data on the operating conditions of transmission owner's system at the time of the system's monthly peak for each month during the most recent year on form FE-T6:
- (a) The date and time of peak.
 - (b) The peak MWs.
 - (c) Any scheduled transmission outages on the system.
 - (d) Any unscheduled transmission outages on the system.
 - (e) Any emergency operating procedures in effect.
- (C) The existing transmission system.
- (1) The reporting electric transmission owner shall provide or cause to be provided a brief narrative description of the existing electric transmission system and identify any transmission constraints and critical contingencies with and without the power transfers to the neighboring companies detailed in forms FE-T7 and FE-T8:
- (a) A summary of the characteristics of existing transmission lines shall be shown as indicated in form FE-T7, characteristics of existing transmission lines.
 - (b) A separate listing of substations for each line included in form FE-T7 shall be shown as indicated in form FE-T8, summary of existing substations.
- (2) Each reporting electric transmission owner shall provide or cause to be provided maps of its electric transmission system as follows:
- (a) One schematic map of the transmission network.

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- (b) A map showing the actual, physical routing of the transmission lines, geographic landmarks, major metropolitan areas, and the location of substations and generating plants, interconnects with distribution, and interconnections with other electric transmission owners.
- (c) Two copies of the map described in paragraph (C)(2)(b) of this rule, for commission use, on a 1:250,000 scale. The electric transmission owners may jointly provide one set of maps to meet this requirement. Participation in the commission's joint mapping project will meet this requirement.

(D) The planned transmission system.

The reporting electric transmission owner shall provide or cause to be provided a detailed narrative description of the planned electric transmission and identify any transmission constraints and critical contingencies with and without the power transfers to the neighboring companies and a description of the plans for development of facilities for years zero through ten as follows:

- (1) Specifications of planned transmission lines shall be provided on form FE-T9, specifications of planned electric transmission lines for:
 - (a) New lines requiring new rights-of-way.
 - (b) Lines in which changes of capacity, either in terms of current, voltage, or both, are scheduled to take place.
 - (c) Other changes in transmission lines or rights-of-way, which would be considered as substantial additions, as defined in rule 4906-1-02 of the Administrative Code.
- (2) A listing of all proposed substations shall be provided in form FE-T10, summary of proposed substations.
- (3) The transmission forecast shall include maps of the planned transmission system as follows:
 - (a) An overlay to each of the maps required in paragraph (C) of this rule showing the planned transmission lines, substation, and generating plants as they will tie into the existing system; planned lines shall be shown and identified as such and keyed into form FE-T9, to provide as complete a picture of the system as is possible. Combined maps showing both existing and proposed facilities may

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be substituted for the overlays. Where planning horizons make it impractical to comply fully with the data requirements of this rule, as many data as are available shall be provided along with the estimated date on which additional data will be available.

- (b) Two copies of the above overlay, for commission use, on a scale of 1:250,000. The electric transmission owners may jointly provide one set of overlays to meet this requirement. Participation in the commission's joint mapping project will meet this requirement.

(E) Substantiation of the planned transmission system.

The reporting electric transmission owner shall submit a substantiation of transmission development plans, including:

- (1) Description and transcription diagrams of the base case load flow studies of the transmission owner's transmission system in Ohio, one for the current year and one as projected either three or five years into the future, and provide base case load flow studies on computer disks in PSSE or PSLF format along with transcription diagrams for the base cases.
- (2) A tabulation of and transcription diagrams for a representative number of contingency cases studied along with a brief statements concerning the results.
- (3) Analysis of proposed solutions to problems identified in paragraph (E)(2) of this rule.
- (4) Adequacy of the electric transmission owner's transmission system to withstand natural disasters and overload conditions.
- (5) Analysis of the electric transmission owner's transmission system to permit power interchange with neighboring systems.
- (6) A diagram showing the electric transmission owner's import and export transfer capabilities and identifying the limiting element(s) during each season of the reporting period. In addition, the reporting electric transmission owner will provide a listing of transmission loading relief (TLR) procedures called during the last two seasons for which actual data are available. That listing may include only those TLRs called as a result of a transmission limit on the reporting electric transmission owner's transmission system. For each TLR event, the listing shall include the maximum level, and the duration at the maximum level, and the magnitude (in MW) of the power curtailments.

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- (7) A description of any studies regarding transmission system improvement, including, but not limited to, any studies of the potential for reducing line losses, thermal loading, and low voltage, and for improving access to alternative energy resources.
 - (8) A switching diagram of the transmission network.
- (F) Regional and bulk power requirements.

To avoid the inefficiencies associated with having each electric transmission owner report this data, the electric transmission owners may have the regional transmission system operator submit a single report on their behalf. This information shall be provided as soon as it becomes available. Data provided to the commission concerning the electric transmission owner's existing and planned bulk power transmission system (two hundred thirty kV and above) shall include the following:

- (1) The most recent regional power existing facilities and an authorized map.
 - (2) A plan on the bulk power transmission network of the region in service (total certified territory of the companies in the region including out-of-state certified territories) at the time of the report, including interfaces with adjoining regions.
 - (3) Regional transmission system power interchange matrix.
 - (4) A transmission diagram and a summary of the load flow base case studies of the bulk power network of the region as it now exists at the time of reporting.
 - (5) A plan of the bulk power transmission network of the region (including interties with adjoining regions) and the general routing of facilities committed or tentatively projected for service within ten years, including identification of principal substations, operating voltages, and projected in-service dates.
 - (6) A list and diagram showing transmission constraints of the bulk power transmission network, including interconnections.
- (G) To the extent that information sought in this rule contains critical energy infrastructure, the reporting person shall provide such information to the commission's staff but redact all such information before filing in the case docket.

4901:5-5-05 Energy and demand forecasts for electric utilities

(A) General guidelines.

- (1) The reporting person shall provide or cause to be provided data on the use of the electric utility's distribution lines and facilities.
- (2) The reporting person shall specify in detail the methodology employed to produce monthly forecasts of energy and peak load for the current year and one year in the future.
- (3) The reporting person shall, upon request, supply to the commission with additional data and maps of distribution lines and facilities.

(B) Distribution energy data and peak demand forecast forms.

The distribution forecast shall be submitted in an electronic form prescribed by the commission or its staff.

- (1) Each electric utility shall file a certified territory energy forecast (megawatt-hours/year). Each electric utility operating in Ohio shall furnish completed sets of FE-D1 and FE-D2 forms:
 - (a) FE-D1 shall contain data for only the Ohio portion of the reporting electric utility's total certified territory.
 - (b) Electric utilities that are members of an integrated operating system and operated on a system basis shall also file FE-D2 for the integrated system.
- (2) Each electric utility shall file Ohio and system seasonal peak load demand forecasts: Actual and forecast system peak demand levels for summer and winter seasons as displayed on forms FE-D3 and FE-D4, as follows:
 - (a) FE-D3 shall contain data for only the Ohio portion of the reporting electric utility's total certified territory.
 - (b) Electric utilities that are members of an integrated operating system and operated on a system basis shall also file form FE-D4 for the integrated system.
- (3) Monthly forecasts of energy and peak loads.

The electric utility shall specify in detail the methodology employed to produce monthly forecasts of energy peak load and resources for the

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current year and one year in the future. The reporting electric utility shall provide or cause to be provided monthly information as required on the following forms:

- (a) From FE-D5, monthly net energy for load forecast.
 - (b) Form FE-D6, monthly native and internal peak load forecasts.
- (C) Substantiation of the planned distribution system.

The reporting electric utility shall submit a substantiation of distribution development plans, including:

- (1) Load flow or other system analysis by voltage class of the electric utility's distribution system performance in Ohio, that identifies and considers each of the following:
 - (a) Any thermal overloading of distribution circuits and equipment.
 - (b) Any voltage variations on distribution circuits that do not comply with the current version of the American National Standard Institute (ANSI) standard C84.1, electric power systems and equipment voltage ratings or standard as later amended.
- (2) Analysis and consideration of proposed solutions to problems identified in paragraph (C)(1) of this rule.
- (3) Adequacy of the electric utility distribution system to withstand natural disasters and overload conditions.
- (4) Analysis and consideration of any studies regarding distribution system improvement, including, but not limited to, any studies of the potential for reducing line losses, thermal loading and low voltage or any other problems, and for improving access to alternative resources.
- (5) A switching diagram of circuits less than one hundred twenty-five kV that are not radial.

4901:5-5-06 Resource plans

- (A) As part of the long-term forecast report filed pursuant to rule 4901:5-3-01 of the Administrative Code, an electric utility shall include a resource plan as defined in rule 4901:5-5-01 of the Administrative Code, which shall contain a narrative discussion and analysis of the following:

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- (1) Anticipated technological changes which may be expected to influence the reporting person's generation mix, use of energy efficiency and peak-demand reduction programs, availability of fuels, type of generation, use of alternative energy resources pursuant to section [4928.64](#) of the Revised Code or techniques used to store energy for peak use.
- (2) The availability and potential development of alternative energy resources pursuant to section [4928.64](#) of the Revised Code for generating electricity.
- (3) Research, development, and demonstration efforts relating to alternative energy resources, including expenditure information and description of specific investigations, and the nature and timing of anticipated results of these investigations.
- (4) The impact of environmental regulations on generating capacity, cost, and reliability, including precise quantitative estimates and/or historical data pursuant to division (B)(2)(b) and/or (B)(2)(c) of section [4928.143](#) of the Revised Code.
- (5) Textual material not specifically required but of importance to the resource forecast of the reporting utility may be included in the appropriate section.
- (6) Electricity resource forecast forms. In addition to the foregoing discussion and analysis, an electric utility shall include the following forms as published by the commission:
 - (a) Form FE-R1, "Monthly Forecast of Electric Utility's Ohio Service Area Peak Load and Resources Dedicated to Meet Ohio Service Area Peak Load." Forecast information concerning monthly loads and resources shall be provided for two years on form FE-R1.
 - (b) Form FE-R2, "Monthly Forecast of System Peak Load and Resources Dedicated to Meet System Peak Load." Forecast information concerning monthly loads and resources shall be provided for two years on form FE-R2.
 - (c) Existing system description. The reporting person shall provide the existing electric system generating capability both inside and outside Ohio in summary form as indicated in form FE-R3: "Summary of Existing Electric Generation Facilities for the System."
 - (d) Long-term forecast requirements. The reporting person shall provide a ten-year forecast which shall identify the electricity

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resource options (including purchased power) expected to be needed to meet forecast system load levels, as identified in the peak load demand forecast, on the following forms:

- (i) Form FE-R4: "Actual Generating Capability Dedicated to Meet Ohio Peak Load."
 - (ii) Form FE-R5: "Projected Generating Capability Changes To Meet Ohio Peak Load." A summary and reconciliation of the information given in form FE-R10 shall be provided by the completion of form FE-R5.
 - (iii) Form FE-R6: "Electric Utility's Actual and Forecast Ohio Peak Load and Resources Dedicated to Meet Ohio Peak Load." Actual and forecast information concerning summer seasonal loads and resources shall be provided for years minus five through ten on form FE-R6.
 - (iv) Form FE-R7: "Actual and Forecast System Peak Load and Resources Dedicated to Meet System Peak Load." Actual and forecast information concerning summer seasonal loads and resources shall be provided for years minus five through ten on form FE-R7.
 - (v) Form FE-R8: "Electric Utility's Actual and Forecast Ohio Peak Load and Resources Dedicated to Meet Ohio Peak Load." Actual and forecast information concerning winter seasonal loads and resources shall be provided for years minus five through ten on form FE-R8.
 - (vi) Form FE-R9: "Actual and Forecast System Peak Load and Resources Dedicated to Meet System Peak Load." Actual and forecast information concerning winter seasonal loads and resources shall be provided for years minus five through ten on form FE-R9.
- (e) Plans for development of facilities in the forecast period. Information regarding new generating capacity shall be provided for each planned facility on form FE-R10: "Specifications of Planned Electric Generation Facilities."
- (i) All information on facilities which will commence operating during the forecast period and facilities on which

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construction will commence during the forecast period shall be displayed.

- (ii) Each applicable facility shall be keyed to the capacity increases summarized in form FE-R5, indicating the amount and timing of additional generating capability provided.
- (B) In the long-term forecast report filed pursuant to rule 4901:5-3-01 of the Administrative Code, the following must be filed in the forecast year prior to any filing for an allowance under Section 4928.143(B)(2)(b) and (c):
- (1) Existing generating system description.
 - (a) The reporting person shall provide a brief summary narrative of the existing electric generating system. If a hearing is to be held on the forecast in the current year, the reporting person shall submit to the commission with its long-term forecast report, the anticipated operating, maintenance, and fuel expense of each unit for each year of the forecast period. The commission may make exceptions to this paragraph for good cause.
 - (b) A summary of the pooling, mutual assistance, and all agreements for purchasing from and selling power and energy to other utilities or nonutility generators, including costs and amounts, shall be provided.
 - (2) Need for additional electricity resource options. The reporting person shall describe the procedure followed in determining the need for additional electricity resource options. All major factors shall be discussed, including but not limited to:
 - (a) System load profile.
 - (b) Maintenance requirements of existing and planned units.
 - (c) Number of units, unit size, and availability of existing and planned units.
 - (d) Forecast uncertainty.
 - (e) Electricity resource option uncertainty with respect to cost, availability, commercial in-service dates, and performance.

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- (f) Lead times for construction or implementation of planned electricity resource options.
- (g) Power interchange with other electric systems, including consideration of the ability to buy and sell power.
- (h) Price-responsive demand and price elasticity due to the implementation of time-differentiated pricing options and assessments of the value of lost load.
- (i) Regulatory climate.
- (j) Reliability criteria, including a discussion and analysis of the reporting person's reliability criteria and factors influencing their selection, including, but not limited to:
 - (i) Reliability measures used and factors including the selection.
 - (ii) Engineering analysis performed.
 - (iii) Economic analysis performed.
 - (iv) Any judgments applied.
- (3) Resource plan.
 - (a) This paragraph shall include the electric utility's projected mix of resource options to meet the base case projection of peak demand and total energy requirements.
 - (b) A discussion of the electric utility's projected system reliability shall be presented. It shall include:
 - (i) A discussion of the future adequacy of the electric utility's projected system in both the short- and long-term.
 - (ii) A discussion of the future adequacy of fuel supplies in both the short- and long-term. Additionally, the reporting person shall provide, for the forecast period, a description of its overall fuel procurement policies and procedures. A description of the system's fuel requirements, the system's geographic source of fuel supply, and the percentage of fuel supply under contract shall be included.

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- (c) The electric utility shall demonstrate the cost-effectiveness of the plan through a comparison over the ten-year forecast horizon of the revenue requirement and rate impacts of the selected plan and alternative plans evaluated. The selection of the plan shall demonstrate adequate consideration of the risks, reliability, and uncertainties associated with the person's selected plan and alternative plans, and of other factors the electric utility deems appropriate.
- (d) The methodology for arriving at the plan must be fully explained and described. The description must be sufficiently explicit, detailed and complete to allow the commission and other knowledgeable parties to understand how the assessment was conducted. This description shall also include:
 - (i) A general discussion of the decision-making process, criteria, and standards employed by the electric utility as it relates to the development of the resource plan.
 - (ii) A discussion of how the plan is consistent with the overall planning objectives of paragraph (A) of rule 4901:5-5-03 of the Administrative Code.
 - (iii) A discussion of key assumptions and judgments used in development of the resource plan.
- (e) The reporting person shall provide information sufficient for the commission to determine the reasonableness of the resource plan, including:
 - (i) The adequacy, reliability, and cost-effectiveness of the plan.
 - (ii) Whether the methodology used to develop the plan evaluates demand-side management programs and nonelectric utility generation on both sides of the meter in a manner consistent with electric utility's generation and other electricity resource options. At a minimum, the total resource cost test as defined in rule 4901:1-39-01 of the Administrative Code, should be used to determine the cost-effectiveness of demand-side management programs.
 - (iii) Whether the plan gives adequate consideration to the following factors:

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- (a) Potential rate and customer bill impacts of the plan.
- (b) Environmental impacts of the plan and their associated costs.
- (c) Other significant economic impacts and their associated costs.
- (d) Impacts of the plan on the financial status of the company.
- (e) Other strategic considerations including flexibility, diversity, the size and lead time of commitments, and lost opportunities for investment.
- (f) Equity among customer classes.
- (g) The impacts of the plan over time.
- (h) Such other matters the commission considers appropriate.