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Compliance Assistance for Load Management Standards Compliance Plan Submittals

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DISCLAIMER

This document is to assist with regulatory compliance only, reflects the views of the staff of the California Energy Commission, and does not alter the provisions of the Load Management Standards regulations in any way. If there is a discrepancy between the regulations and this document, the regulations supersede this document.

ABSTRACT

This document provides compliance assistance to regulated parties, in a question-and-answer format, for developing and submitting compliance plans to the California Energy Commission (CEC), as required by the amended Load Management Standards regulations. This document provides an overview of the Load Management Standards, describes the CEC's compliance plan review process, and includes information that may be relevant to demonstrating good faith efforts for regulated entities to meet Load Management Standards program goals.

Keywords: Load Management Standards, LMS, load flexibility, demand flexibility, demand response, time-dependent rates, time-of-use rates, electricity rates, Market Informed Demand Automation Server, MIDAS, MIDAS API, compliance plan

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Introduction

This document provides information in a question-and-answer format to assist regulated parties in developing their Load Management Standards compliance plans as required by California Codes of Regulations Sections 1621(d) and 1623.1(a). The amended Load Management Standards do not require the California Energy Commission (CEC) to issue formal guidance. The CEC is providing this resource to assist, streamline, and clarify the process by which regulated entities can comply with regulatory requirements.

Timely compliance with the LMS regulations by the regulated entities is important to achieving California's clean energy policy priorities, climate goals, electric grid resilience, and the reduction of Californians' energy burden. The LMS regulations lay the foundation for an automated load flexibility ecosystem in California that will be critically important in the coming years and decades to support the transition to 100 percent clean energy for all, realizing a carbon neutral California, and containing costs borne by California ratepayers during this transition. Timely compliance by the regulated entities is critical to ensure this future state is realized as quickly as possible to achieve California's clean energy policy priorities, climate goals, electric grid resilience and the reduction of Californians' energy burden.

Load Management Standards: Overview

What Do the LMS Amendments Do?

The CEC amended the Load Management Standards in 2022 to require California's large electric utilities and community choice aggregators (CCAs) to provide residential and commercial customers access to time-dependent electricity rates and programs designed to better align electricity demand with the availability of renewable energy resources. This alignment will help customers tailor their electricity use to save money, minimize greenhouse gas emissions from electricity production, improve the resilience of the electrical grid, and reduce the chance of planned and unplanned outages.

How Do the LMS Amendments Work?

The 2022 Load Management Standards amendments (hereinafter referred to as "LMS") require California's large utilities and CCAs to undertake a planning process under the oversight of the CEC and their rate-approving bodies to offer time-dependent, marginal cost-based electricity rates and programs. Large utilities and CCAs will upload their time-dependent rates to the CEC's Market Informed Demand Automation Server (MIDAS), provide customers Rate Identification Access Numbers (RINs), and jointly develop a RIN access tool so third parties can assist customers in checking or changing the rate enrollment with the customers' authorization. The large utilities and CCAs will also implement public education programs to promote the benefits of load flexibility. The planning process is a key element of the LMS.

Who Do the LMS Apply to?

The LMS apply to the five largest electric utilities in California (Los Angeles Department of Water and Power, Pacific Gas and Electric, Sacramento Municipal Utility District, San Diego Gas and Electric, Southern California Edison), and large CCAs operating in the territories of those utilities that provide more than 700 GWh of electricity to customers in any calendar year. Those CCAs currently include the following:

- Central Coast Community Energy
- CleanPower SF
- Clean Power Alliance of Southern California
- East Bay Community Energy
- Marin Clean Energy
- Peninsula Clean Energy Authority
- Pioneer Community Energy
- San Diego Community Power
- San Jose Clean Energy

- Silicon Valley Clean Energy Authority
- Sonoma Clean Power Authority
- Valley Clean Energy

Collectively, these regulated entities are referred to as Load-Serving Entities (LSEs). The LMS do not require electricity consumers to take action to comply with these requirements. Instead, the LSEs will provide businesses and individuals the option to take advantage of time-dependent rates, including marginal cost-based rates, and programs that consider program design elements that save money on electricity, help reduce greenhouse gas emissions, enhance equity, and contribute to grid resilience.

Where are the LMS Codified?

The Load Management Standards are codified in Title 20, California Code of Regulations (“CCR”) sections 1621-1625. The amendments appear in sections 1621, 1623, and 1623.1.

The amended regulations are available from [Westlaw](#).

What are the Main Requirements of the LMS?

The LMS amendments require large investor-owned utilities (IOUs), publicly owned utilities (POUs), and CCAs to:

1. Upload and maintain their time-dependent electricity rates in the CEC’s MIDAS database. LSEs will assign customers with RINs that enable them to access electricity rates in real time and manage their energy use to optimize electricity savings and help align with supply and availability of renewable energy. Definitions of Large IOUs, Large POUs, and Large CCAs¹ can be found at Title 20 Cal. Code Regs. (“CCR”) sections 1621(c)(8), (9), and (10), respectively.
2. Jointly build a RIN access tool to enable customers and third parties to look up customers’ RINs and, with customer consent, program their devices to connect with the rates uploaded to MIDAS (Section 1623(c)(2)(A)).
3. Provide customers with access to marginal cost-based electricity rates that vary at least hourly (Large IOUs-Section 1623(d)(2); Large POUs and Large CCAs-Section 1623.1(b)(4)). Where such rates have not yet been adopted, the LSEs

¹ “Large” as in Large IOUs, Large POUs, and Large CCAs are referenced with a capital “L” to align with the regulatory text.

will provide programs that enable customers to voluntarily manage their electricity load based on other MIDAS hourly marginal cost-based rates or other marginal signals that enable automated end-use response. LSEs will submit plans that demonstrate how they will meet these requirements (Large IOU Compliance Plans-Section 1621(d)(1); Large POU and Large CCA Compliance Plans-Section 1623.1(a)(1)(C)).

4. LSEs will conduct public information programs to inform customers of the benefits of marginal cost-based rates and automation, which may include saving money, aligning electricity usage with available green energy resources, and reducing use during periods of grid stress (Large IOUs-Section 1623(d)(5); Large POUs and Large CCAs-Section 1623.1(b)(5)).

Are the LMS Requirements the Same for Large IOUs, Large POU's, and Large CCAs?

No. The LMS account for differences in the rate-approving processes for Large IOUs (whose rates are approved by the California Public Utilities Commission (CPUC) versus the Large POU's and Large CCAs (whose rates are approved by local governing boards). The main difference is Large IOUs will first submit their compliance plans to the CEC for approval and then apply to the CPUC for approval of at least one marginal cost-based rate for each class of customer covered by the regulations. Alternatively, Large POU's and Large CCAs will submit their compliance plans first to their rate-approving bodies for approval and then to the CEC for approval.

Large IOUs may seek exemptions, delays, or modifications of LMS requirements from the CEC's Executive Director. If the request meets the regulatory requirements, the Executive Director will submit the request to the CEC via a business meeting. Large POU's and CCAs may incorporate such requests into their compliance plans, which are first reviewed by their rate-approving bodies and then by the CEC after their approval by the rate-approving bodies.

Do the LMS Set Electricity Rates?

No. Electricity rates are set by rate-approving bodies, such as CPUC for Large IOUs, or Governing Boards for Large POU's and CCAs, that approve the rates LSEs charge. The LMS require the LSEs to undertake a planning process and offer rates or programs structured according to the requirements of the regulations. The new LMS rate structures and programs will be based on the marginal costs of electricity, which are defined as a variation in "electric system cost that is caused by a change in electricity supply and demand during a specified time interval at a specified location" (Section 1621(c)(12)). Rates adopted by the rate-approving bodies consistent with the LMS will be offered to all customer classes the Large IOUs, POU's, and CCAs serve, with certain exceptions.

What Does "Customer Class" Mean?

"Customer class" means a broad group of electricity customers. Customer classes include, but are not limited to, residential, commercial, industrial, and agricultural. It does not include street lighting.

"Customer" or "customers" is defined as a customer or customers of a large utility or CCA within a customer class. (Section 1621(c)(6)).

How Are Marginal Cost-Based Rates Calculated?

Marginal cost is calculated "as the sum of the marginal energy cost, the marginal capacity cost (generation, transmission, and distribution), and any other appropriate time- and location-dependent marginal costs, including the locational marginal cost of associated greenhouse gas emissions, on a time interval of no more than one hour.

Energy cost computations shall reflect locational marginal cost pricing as determined by the associated balancing authority, such as the California Independent System Operator, the Balancing Authority of Northern California, or other balancing authority. Marginal capacity cost computations shall reflect the variations in the probability and value of system reliability of each component (generation, transmission, and distribution)” (Large IOUs-Section 1623(a)(1); Large POUs and CCAs-1623(b)(1)).

When did the Amendments to the Load Management Standards Regulations take Effect?

The LMS took effect April 1, 2023. That started the clock on the compliance periods described in the regulations.

What is the LMS Compliance Schedule for Large IOUs, Large POUs, and Large CCAs?

For the up-to-date compliance schedule, please refer to the compliance schedule posted in the LMS docket [23-LMS-01](#).

Notably, Large IOUs, POUs, and CCAs have different compliance schedules for some of the requirements.

Large IOU Compliance Plans

What are the Basic Requirements for Large IOU Compliance Plans?

Large IOUs must submit compliance plans to CEC's Executive Director to comply with the requirements of sections 1621 and 1623 of the LMS by October 1, 2023. Sections 1621 and 1623 contain several basic compliance requirements for IOUs. Primary among them is the requirement that IOUs develop marginal cost-based rates or programs structured according to the regulation and offer at least one such rate or program to each class of the IOUs' electricity customers.

For LMS compliance plans, submission to the LMS docket [23-LMS-01](#) satisfies the requirement to submit to the Executive Director.

How Will the Energy Commission Review Large IOU Compliance Plans?

The LMS provide that "Commission shall approve submittals which are consistent with these regulations and which show a good faith effort to plan to meet program goals for the standards. In reviewing a plan, the Executive Director and the CEC may request additional information consistent with sections 1621 and 1623." (Section 1621(d)(2)). In other words, the compliance plan must show that the Large IOU will comply with sections 1621 and 1623 and must represent a good faith effort to meet program goals.

Determining what is "a good faith effort to plan to meet" LMS program goals is inherently a case-by-case question, and each case will be decided based on its own particular set of facts. Generally, 'good faith effort' includes clear evidence that the Large IOU has made every available effort to comply with the purpose of the regulations, as stated in section 1621(a), and to meet the required deadlines throughout the LMS. Specific examples of information that could help the CEC in evaluating whether there has been a good faith effort are included in the next section.

Information Relevant to Demonstrating Good Faith Efforts to Meet LMS Program Goals

This section highlights information that can be relevant to determining whether a Large IOU's plan meets the requirements of the regulation and represents a good faith effort to meet LMS program goals. This list provided here is not intended to be exhaustive; nor are each of the elements listed here required for compliance. CEC staff may consider other information not listed here and may use discretion in deciding which information to consider and how to weigh it. CEC will document its decisions on the public record, including the LMS docket [23-LMS-01](#).

1. Marginal rate design and application -1623 (a)

- a) Rate design timeline
 - b) Rate application timeline
 - c) Marginal rate design resource commitment
 - i. Resource commitment plan by year (0.5-4 years after effective date) that includes expected funding, contracts, and/or personnel
 - ii. Current resource commitment to date (this can be included in a table or graph with the plan by year)
 - d) Marginal cost-based rate design progress. Identify potential marginal cost rates and evaluate their compliance with 1623(a)(1)
 - i. Discussion of rate design intentions, considerations, and trade-offs
 - ii. Frequency
 - iii. Proposed details about marginal capacity costs
 - iv. Proposed details about marginal energy costs
 - v. Proposed details about marginal transmission and distribution costs
 - vi. Proposed details about other marginal costs
 - vii. Proposed details about the fixed costs
 - viii. Customer class(es)
 - e) Resource commitment to rate application and current progress
 - i. Resource commitment plan by year (0.5-4 years after effective date): funding, personnel
 - ii. Current resource commitment to-date
 - f) Internal infrastructure development in support of marginal cost rates adoption
 - i. Billing system compatibility review and improvement plan and resource commitment:
 - A. Software
 - B. Hardware
 - C. Resource Commitment: funding and personnel
 - ii. Hourly marginal costs-based rates calculation system development plan and resource commitment:
 - A. Software
 - B. Hardware
 - C. Resource Commitment
2. 1623(b) Time-dependent rate submission to MIDAS via MIDAS Application Programming Interface (API)
- a) Status of MIDAS submission for current time-dependent rates
 - i. List of current time-dependent rates and their RINs

- ii. Proof of rates availability on MIDAS (e.g., Large IOUs could attach MIDAS rate download file in JSON format and submit to LMS Implementation Docket [23-LMS-01](#))
 - iii. Composite rate calculation and submission solution
 - iv. Plan for ensuring accuracy and maintenance of current time-dependent rates
- b) Plan and current progress of internal infrastructure upgrade for LMS-compliant submission of current and future time-dependent rates, including hourly or sub-hourly marginal cost-based rates streaming process to MIDAS
- 3. 1623(c)(4) Plan to provide RIN(s) on customer billing statements and online account using both text and QR code
 - a) Implementation plan with timeline
 - b) Billing system update plan and current progress
 - c) Proposed text design and QR code design and proposed placement on billing statements
 - d) QR Code linked webpage (if any)
 - i. Timeline for webpage creation and finalization
 - ii. Webpage objectives
 - iii. Proposed contents
 - iv. As a potential channel for public information program per 1623(d)(3), considerations and/or plans, if any, to include LMS-compliant programs and/or rates available for the customer to encourage enrollment
- 4. 1623(c)(1)-(3) Plans and current participation in the development of Single Statewide RIN Access Tool
 - a) Resource commitment
 - i. Resource commitment to the tool working group: funding, contracts, personnel
 - ii. Resource plan for development of the tool
 - iii. Resource commitment and plan for implementation of the tool:
 - A. Funding plan
 - B. Utility's review and identification of its internal infrastructure needs
 - C. Plans to address infrastructure needs identified in item B directly above
- 5. 1623(d)(1)-(2) List of cost-effective, LMS-compliant programs and rates
 - a) Marginal Cost Rates
 - i. Supplemental information regarding marginal cost rates not included in section 1, above (anything regarding proposed rates: rates structure, target customer classes, rate application status)

- ii. Enrollment targets, and projections
 - b) Hourly-MIDAS signals-based load flexibility programs
 - i. Description of current and/or proposed programs:
 - A. types of hourly MIDAS signals
 - B. target end-uses/customers
 - C. equipment requirements
 - D. participating third-party automation service providers, if applicable
 - E. control algorithms
 - F. enrollment – current and projections
 - G. load impact projections
6. 1623(d)(3) Plan for conducting public information program
 - a) Public Information Program details on informing and educating customers
 - i. Why marginal cost-based rates and automation are needed
 - ii. How the rates will be used
 - iii. How these rates can save the customer money
 - b) Public Information Program:
 - i. Dissemination medium
 - ii. Outreach targets and scale
 - iii. Partners
 - c) Resource commitment plan to design and implement the public information programs:
 - i. Funding
 - ii. Contracts
 - iii. Personnel

Large POU and Large CCA Compliance Plans

What are the Basic Requirements for Large POU and Large CCA Compliance Plans?

Large POU and CCA compliance plan requirements are discussed in section 1623.1(a)(1):

“Within six months of the effective date of these regulations each Large POU, and within one year of the effective date of these regulations each Large CCA, shall submit a compliance plan that is consistent with this Section 1623.1 to its rate approving body for adoption in a duly noticed public meeting to be held within 60 days after the plan is submitted. The plan shall describe how the Large POU or the Large CCA will meet the goals of encouraging the use of electrical energy at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions. The plan shall include consideration of programs and rate structures as specified in section 1623.1 (b)-(d).

(A) The plan must evaluate cost effectiveness, equity, technological feasibility, benefits to the grid, and benefits to customers of marginal cost-based rates for each customer class.

(B) If after consideration of the factors in Subsection 1623.1(a)(1)(A) the plan does not propose development of marginal cost-based rates, the plan shall propose programs that enable automated response to marginal cost signal(s) for each customer class and evaluate them based on their cost-effectiveness, equity, technological feasibility, benefits to the grid, and benefits to customers.

(C) The Large POU or the Large CCA shall review the plan at least once every three years after the plan is adopted. The Large POU or Large CCA shall submit a plan update to its rate approving body where there is a material change to the factors considered pursuant to Subsections 1623.1 (a)(1)(A) and (B).”

Section 1623.1(b) requires Large POU and CCAs to “develop marginal cost-based rates or public programs structured according to the requirements of this article [the LMS].” These requirements include applying to their rate-approving body for approval of at least one marginal cost-based rate (section 1623.1(b)(2)), submitting to the CEC Executive Director a list of cost-effective load flexibility programs (section 1623.1(b)(3)), offering customers voluntary participation in either a marginal cost-based rate approved by the rate-approving body or a cost-effective program (section 1623.1(b)(4)), and conducting a public information program informing customers of the benefits of marginal cost-based rates or load flexibility programs (section 1623.1(b)(5)).

Section 1623.1(c) requires that Large POU and CCAs upload their time-dependent rates to MIDAS.

Section 1623.1(d) sets out the enforcement process. The reference to it in Section 1623.1(a)(1) is a typographical error, so plans need not address this since Large POU and CCAs do not enforce the LMS.

Section 1623(c) requires Large IOUs, POU and CCAs to develop a single statewide tool to access customer RINs.

Section 1623(d) specifies how Large IOUs are to encourage mass-market automation of load management through information and programs.

How Will the Energy Commission Review Large POU and Large CCA Compliance Plans?

Large POU and CCAs must first submit their compliance plans to their rate approving bodies. Then they will submit their plans to the CEC's Executive Director for approval by the CEC. Compliance plans may be submitted directly to the LMS Implementation Docket [23-LMS-01](#). The CEC Executive Director makes an initial determination whether the plan is consistent with section 1623.1(a)(1) and (2) and then submits the plan to the CEC with a recommendation on whether to approve it. The CEC will approve plans that are consistent with section 1623.1(a)(1) and (2) and that show a good faith effort to meet the goals listed in section 1623.1(a)(1) and (2). (Section 1623.1(a)(3)(B).)

The goals listed in section 1623.1(a)(1) are "encouraging the use of electrical energy at off-peak hours, encouraging the control of daily and seasonal peak loads to improve electric system efficiency and reliability, lessening or delaying the need for new electrical capacity, and reducing fossil fuel consumption and greenhouse gas emissions." Section 1623.1(a)(2) adds the goals of avoidance of extreme hardship, system reliability, efficiency, technological feasibility, and cost-effectiveness.

Determining whether a plan is consistent with sections 1623 and 1623.1(a) and (2) and represents "a good faith effort to plan to meet" LMS program goals is inherently a case-by-case question, and each case will be decided based on its own particular set of facts. However, it is useful to consider what information may be relevant to deciding whether there is a "a good faith effort to plan to meet program goals for the standards." In other words, the plan must show that the Large POU or CCA will comply with sections 1623 and 1623.1 and must represent a good faith effort to meet program goals.

Information Relevant to Demonstrating Good Faith Efforts to Meet LMS Program Goals

This section highlights information that can be relevant to determining whether a Large POU or CCA plan meets the requirements of the regulation and represents a good faith effort to meet LMS program goals. This list provided here is not intended to be exhaustive; nor are each of the elements listed here required for compliance. CEC may consider other information not listed here and may use discretion in deciding which

information to consider and how to weigh it. CEC will document its decisions in the public record.

1. 1623(b) Time-dependent rate submission to MIDAS via the MIDAS API
 - a) Status of submission for current time-dependent rates
 - i. List of current time-dependent rates and their RINs
 - ii. Proof of rates availability on MIDAS (e.g., Large POU's or CCAs could attach MIDAS rate download file in JSON format)
 - iii. Composite rate calculation and submission solution
 - b) Plan and current progress of internal infrastructure upgrade for LMS-compliant submission of current and future rates
2. 1623(c)(4) Plan to provide RIN(s) on customer billing statements and online account using both text and QR code
 - a) Implementation plan with timeline
 - b) Billing system update plan and current progress
 - c) Proposed text design and QR code design and proposed placement on bills
 - d) QR Code linked webpage (if any)
 - i. Timeline for webpage creation and finalization
 - ii. Webpage objectives
 - iii. Proposed contents
 - iv. As a potential channel for public information program per 1623(d)(3), considerations and/or plans, if any, to include LMS compliant programs and/or rates available for the customer to encourage enrollment
3. 1623(c)(1)-(3) Plans and current participation in the development of Single Statewide RIN Access Tool
 - a) Resource commitment
 - i. Resource commitment to the tool working group: funding, personnel.
 - ii. Resource commitment and plan for compliant implementation of the tool:
 - A. Funding
 - B. Utility's review and identification of its internal infrastructure needs
 - C. Plans to address infrastructure needs identified in B, directly above
4. 1623.1(a) Marginal cost rates evaluation
 - a) Cost Effectiveness
 - b) Equity
 - c) Technological feasibility
 - d) Benefits to the grid
 - e) Benefits to the customers

If the marginal cost rates evaluation leads to proposal of marginal cost rates development: item 5, if not, consider item 6

5. 1623.1(b) marginal costs rate design and application plan
 - a) Rate design timeline
 - b) Rate application timeline

- c) Marginal rate design resource commitment:
 - i. Resource commitment plan by year (0.5-4 years after effective date):
funding and personnel
 - ii. Current resource commitment to-date
 - d) Marginal cost-based rate design progress
 - For each candidate marginal cost rates and their compliance:
 - i. Discussion of rate design intentions, considerations, and trade-offs
 - ii. Frequency
 - iii. Proposed details about marginal capacity costs
 - iv. Proposed details about marginal energy costs
 - v. Proposed details about marginal transmission and distribution costs
 - vi. Proposed details about other marginal costs
 - vii. Proposed details about the fixed costs
 - viii. Customer class(es)
 - e) Resource commitment to rate application and current progress
 - i. Resource commitment plan by year (0.5-4 years after effective date):
funding, personnel
 - ii. Current resource commitment to-date
 - f) Internal infrastructure works in support of marginal cost rates adoption
 - i. Billing system compatibility review and improvement plan
 - ii. Hourly marginal cost-based rates calculation system development:
 - A. Software
 - B. Hardware
 - C. Personnel
6. 1623.1(a)(1)(B) Description of MIDAS-based hourly marginal signal programs (if applicable)
- a) Hourly-MIDAS signals-based load flexibility programs
 - i. Description of current and/or proposed programs:
 - A. types of hourly MIDAS signals
 - B. target end-uses/customers
 - C. equipment requirements
 - D. participating third-party automation service providers, if applicable
 - E. control algorithms
 - F. enrollment projections
 - G. load impact projections